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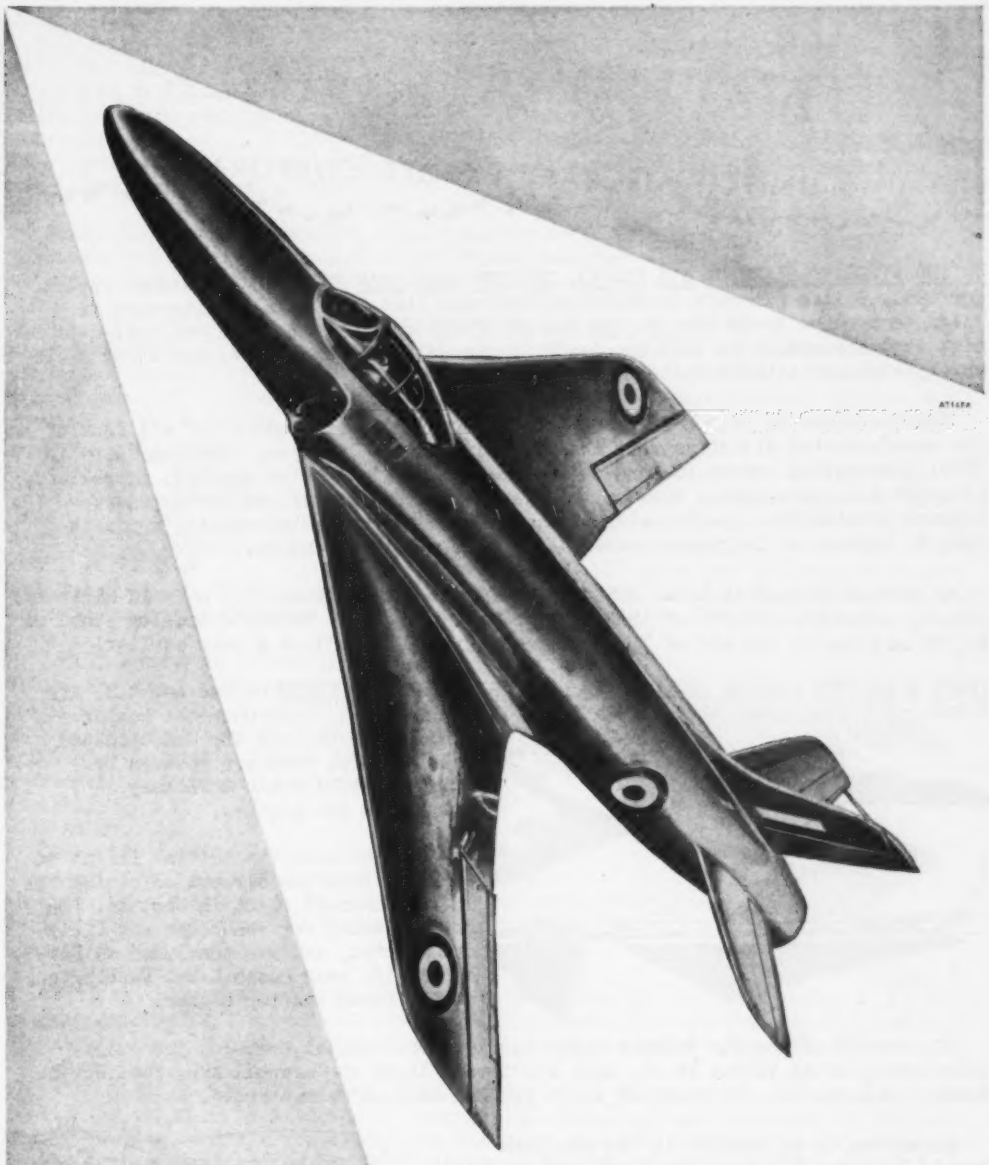

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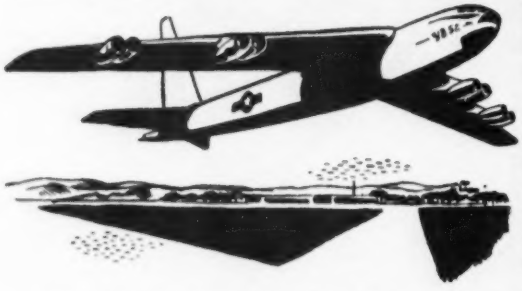
UNITED AIRCRAFT SALES UP 55% IN '51, BUT NET ROSE ONLY 8% — In its annual report for 1951, United Aircraft Corporation disclosed that it took a 55% increase in sales to produce an 8% gain in net income after taxes. This was a reflection of high costs necessary to tool up, train thousands of new employees, and other costs which accompany a build-up to high production level.

Foreign sales by United Aircraft Export Corporation of products of all four of its manufacturing divisions were considerably greater last year than they were in 1950. Substantial orders on hand at December 31, 1951 were for engines, propellers, aircraft and spare parts. Substantial spare parts orders reflect the extensive forward provisioning that foreign airlines which use United Aircraft's products must do because of lengthened schedules due to military demands.

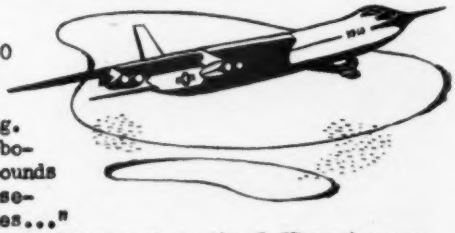
Of United Aircraft's total 1951 sales of over $417 million, 84% were in military orders, compared with 87% of 1950 sales of $269,255,000. United's backlog stood at $1,300 million at the end of 1951, compared with $715 million a year earlier.

PRATT & WHITNEY POWERED JET BOMBERS MAKE INITIAL TEST FLIGHTS — Two new U.S. Air Force jet bombers made successful first flights in April. They were the Boeing Aircraft YB-52, and the Consolidated Vultee YB-60. Both are powered by eight powerful Pratt & Whitney J-57 axial flow jet engines.



The B-52 made its initial flight on April 15 from the airport adjoining the Boeing Aircraft plant in Seattle. The flight lasted for two hours and fifty-one minutes, and was concluded at Larson Field, near Moses Lake, Washington, an Air Force testing center.

The second of the Air Force's eight-jet intercontinental bombers, the swept-wing Consolidated Vultee YB-60, made its first flight at Carswell AFB, Fort Worth, Texas, on April 18. It remained aloft for one hour and six minutes.



According to an account in the New York Herald Tribune "...both the YB-52 and the YB-60 were built to the same basic requirements laid down for the B-36 — the ability to carry a 10,000-pound bomb 10,000 miles without refueling. They are equipped with Pratt & Whitney J-57 Turbo-Wasp jet power plants developing about 10,000 pounds of thrust each, or the equivalent of 10,000 horse-power at jet plane operating speeds and altitudes..." Unfortunately, the performance figures on these airplanes and on the J-57 engine are classified and cannot be published.

HAMILTON STANDARD SUPPLIES VITAL EQUIPMENT FOR NEW JET BOMBERS -- America's newest intercontinental jet bombers, the Boeing YB-52 and the Consolidated YB-60 each use equipment developed and produced by the Hamilton Standard Division of United Aircraft. Both new aircraft are equipped with turbine engine starters and jet fuel controls supplied by Hamilton Standard. The starter is a comparatively new product, first announced in October 1951. It substantially reduces the time required for starting turbine power plants.

Hamilton's jet fuel control, also a new product, is a device which governs turbine-wheel speeds and restricts by direct "sensing" the amount of fuel admitted to the combustion chambers when the engine's operating temperatures rise.

CHANCE VOUGHT AIRCRAFT HAS DESIGNED AND BUILT TOP NAVY PLANES FOR 35 YEARS --June 1 marked the 35th anniversary of the founding of Chance Vought Aircraft Division of United Aircraft Corporation. Its steady growth since 1917 has reflected the advanced ideas of the late Chance Milton Vought, brilliant aeronautical engineer and founder of the company.

The record of Chance Vought "firsts" is both long and impressive. The U.S. Navy's first aircraft carrier, the U.S.S. Langley, was equipped exclusively with Vought VE-9s. The Vought UO-1 was the first to prove the practicability of catapulting planes from battleships and cruisers; a Vought plane was the first folding-wing monoplane; and the F4U Corsair, before World War II was the first 400-mile-an-hour fighter in the country.

Today, Vought is producing two outstanding planes for the U.S. Navy. One is the AU-1, especially designed for close air support. Although extensively modified, it basically follows the original F4U Corsair design laid down in 1939 -- a dramatic instance of Vought's far-sighted designing.

The other is the sleek-looking Cutlass, a tailless, swept-wing fighter, powered by twin-jet engines and afterburners. It was designed to out-fly and out-fight any other carrier-based aircraft in the world.

Still another version of the Corsair in production in 1952 is the F4U-7. It is being made for the French Government under the Mutual Defense Assistance Program. Similar to the World War II F4U-4, the F4U-7 carries heavier armor and armament.

SIKORSKY S-55 IS CERTIFIED FOR COMMERCIAL USE -- The first transport-type helicopter in the world to be approved for commercial operation, and to receive a certificate of airworthiness for export, is Sikorsky Aircraft's big S-55. It was granted these certifications by the Civil Aeronautics Administration last March.

The S-55 is the basic design from which Sikorsky H-19 and HRS military versions were built. Both of these models have seen outstanding service in combat since their introduction there in the Spring of 1951. In fact the performance of these models has been so impressive that similar versions have been ordered by all branches of the U. S. military services.

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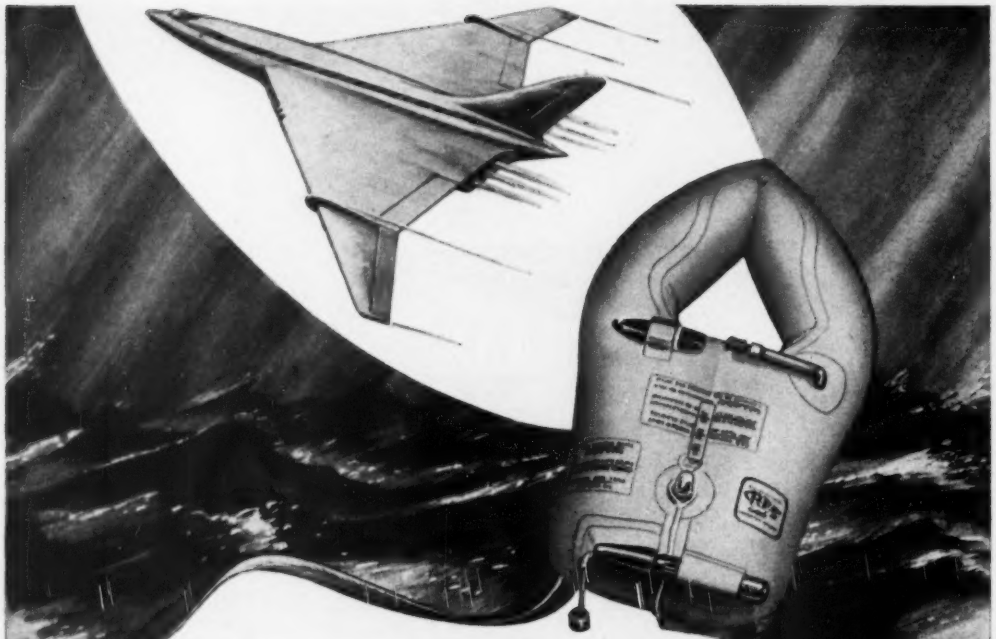

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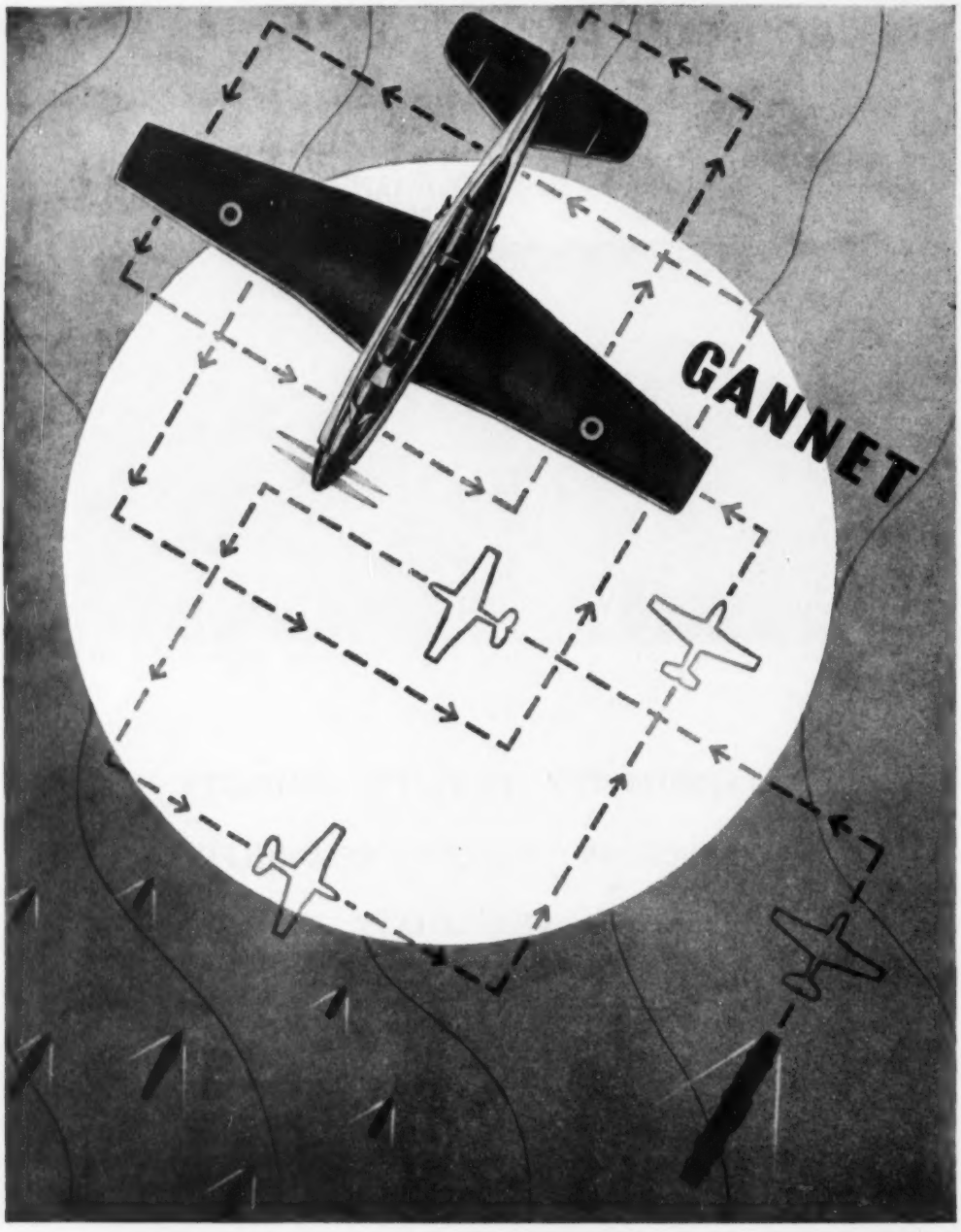

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EDITOR
MAURICE A. SMITH, D.F.C.

ASSISTANT EDITOR
H. F. KING, M.B.E.

TECHNICAL EDITOR
C. B. BAILEY-WATSON, B.A.

ART EDITOR
JOHN YOXALL

Editorial, Advertising and Publishing Offices:

DORSET HOUSE,
STAMFORD STREET,
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Telegrams, Flightpress, Sedist, London.
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Telegrams, Autocar, Coventry.
Telephone, Coventry 5210.

BIRMINGHAM, 2.
King Edward House,
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Looking at Air Displays

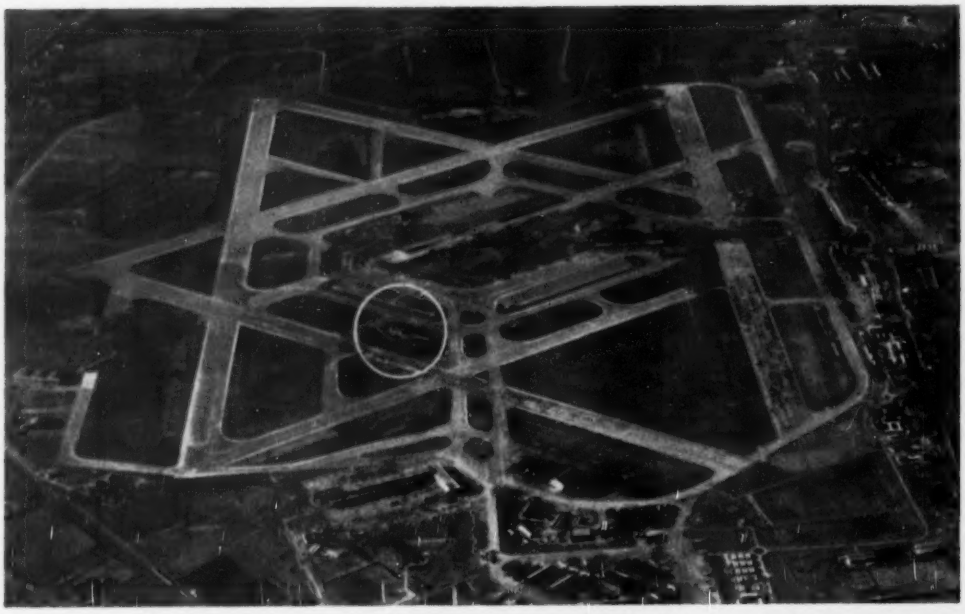
ALTHOUGH no other country has yet succeeded in staging a "Farnborough" it would be wrong to suppose that we in Britain have nothing to learn about the art of putting over a good air display. British observers have lately been most impressed by the success of two international events on the Continent: the N.A.T.O. gathering which took place this year at Brussels and—described on pages 181-183 of this issue—the Netherlands display at Ypenburg. Particularly noticeable at both events was the enthusiasm of the public, a factor which rewards a hundredfold the efforts of pilots and organizers. The basic ingredients of these and similar foreign displays—plenty of aircraft, skilfully flown—are familiar enough, but somehow flavours are added to make the whole aeronautical mixture so much more palatable. From the Continent one brings impressions of a busy and cheerful atmosphere, brilliant flags and tireless military bands parading the enclosures. Attendances are vast, and there are great opportunities of showing off British prowess in the air.

The Ministry of Supply and the manufacturers concerned did well to send the Swift and Hunter to Brussels, but opportunities have not always been used to such good effect. Exports depend upon overseas opinion, and the chance of demonstrating a new British aircraft to a six-figure crowd should never be lightly dismissed. Our turbine-powered airliners should be shown at the major Continental air displays, particularly when the host country offers a potential market for them. We should like to have seen both Comet and Viscount at Ypenburg, for example.

The R.A.F., too, should be encouraged to show the flag as vigorously as possible—to wave it, in fact. The U.S.A.F. has been taking European displays very seriously, but that is no reason for us to sustain illusions that the only effective air-power on the Continent consists of aircraft made in America. We lack neither the aircraft nor the pilots capable of demonstrating them. The Canberra, for example, stole the show at Orly in 1950, when W/C. Beamont exploited this fine aircraft in his best Farnborough manner; yet R.A.F. Canberras—sometimes only one machine—have recently been demonstrated at what appeared to be half speed and with virtually no manœuvrability, presumably because the pilots were flying to strict instructions. Situations of this sort are unfair to both constructors and pilots, and we urge that if the R.A.F. is to appear in a display at all it must be seen at its best. Objections are often heard that practice for displays disrupts essential training, but here we are speaking of important foreign events, where national prestige is concerned and which, in any case, occur only two or three times a year.

At home, where flying displays have become much more frequent, we might do better to restrict quantity for the sake of quality. Although the summer calendar is crowded with many types of meeting, there is something lacking: many people would welcome the opportunity of seeing a full-scale international display (perhaps with more emphasis than is usual on private flying), and of returning hospitality to pilots from abroad. Another popular move would be the revival of the immensely successful pre-war series of R.A.F. Displays. There was, of course, a step in this direction in July 1950, when the R.A.F. staged a memorable meeting at Farnborough, but training priorities have since prevented further repetition.

We have the impression, however, that the "open day" at 70-odd R.A.F. stations during Battle of Britain week involves much more flying than would a single R.A.F. display—and correspondingly greater interference with training schedules. Under the present system, most stations work at maximum effort to offer a large-scale flying programme, and several formations of aircraft must circulate round the country to put in appearances at as many airfields as possible. The idea of open days is an excellent one, enabling the taxpayer to see the Service at close quarters; but it should be possible to reduce the scale of flying programmes without losing the all-important contact between airman and civilian, and to re-deploy resources for at least one great national or international display wherein massed formations could make their appearance.



The original Fairey buildings (circle) appear as an oasis in the desert of concrete now forming London Airport. The Bath Road is on the right.

THE GREAT WEST AERODROME

A London Airport Landmark, Last Link with Fairey's, about to Vanish

By B. J. HURREN

A MESSAGE, accurate enough, but somewhat premature, saying that a demolition squad was about to dismantle an isolated hangar right in the middle of the runways sent me scuttling to London Airport to photograph this event. For the hangar earmarked to disappear "as soon as alternative accommodation could be found" is the final remnant of the original Fairey airfield which many will recall with nostalgia.

What is now internationally known as London Airport, and was previously widely known as Heath Row or Heathrow (this latter being strictly correct) was originally named by the man who started the whole scheme, Sir Richard Fairey, as "The Great West Aerodrome."

At Heathrow—as the Department of Civil Aviation, Air Ministry, termed it—the Fairey Aviation Co. created at considerable expense a fine airfield out of market-garden land. It was a site which (after a small supplementary purchase of ground) extended to 240 acres, well-stocked with daffodils, rhubarb and celery.

From this the metamorphosis was sufficient for envious eyes to be cast upon it by authorities, who were then obsessed with the idea that an airport had to be near a city. The argument was that transit time to and from airports must be cut to a minimum. The truth was (and is), of course, that it is the first ten miles "out" from the city centre that wastes so much time; and until the helicopter comes, with a shuttle service, the position will not just remain unchanged—it will become aggravated.

The site of Heathrow was purchased by Fairey's in December, 1928. There were many expert doubters, for they rightly declared that the new airfield was in the Thames Valley fog belt. In this knowledge, Heathrow was originally ignored by the planners, and an ambitious scheme was evolved by

As it was in 1934: A glimpse of Fairey's airfield and the surrounding country as seen from the tail turret of the twin-engined Fairey bomber (named after another famous airfield) the Hendon. The late Chris Staniland is at the controls. In this photograph the Bath Road appears diagonally across the top right-hand corner.

"Flight" photograph

1938 whereby Croydon, Heston, Fairlop and Lullingstone were to "bracket" London, with Gatwick as a sort of long-stop, and, somewhere else, a flying-boat base.

Aeronautical development soon made all these plans obsolete but Fairey's maintained faith in their ideas. The market garden was cleared away, mole drainage was laid, and extensive levelling work was undertaken. The main hangar was erected and a concrete apron and surround added in the spring of 1930. The new airfield was formally opened on June 28th, 1930, on the same day as the 11th R.A.F. Pageant, at Hendon.

Within a month, on July 25th, the first-off aircraft had been rigged and flight tested : it was a Firefly Mk II biplane. Note that the second hangar, which is to be seen in many photographs, was not erected until 1937.

In all, some 1,500 aircraft were given final assembly and flight test at Fairey's Great West Aerodrome; for it should be understood that the site was so near to the parent factory at Hayes that it could be conveniently used for assembly as well as for flight-testing.

Many types that became world-famous emerged *via* Heathrow. Firefly biplanes, Fairey IIIFs, the Long Range Monoplane, Gordon, Seal, Fox, Hendon, Fantôme, Swordfish, Battle, Albacore, Fulmar and Firefly monoplane Mk I—all came from this famous building now scheduled to disappear. There were also prototypes : S.9/30, G.4/31, P.27/32 (prototype Battle), and P.4/34 (forerunner of the Fulmar).

But the aeronautical world will perhaps remember the pre-war Heathrow most of all for the series of garden parties which the Royal Aeronautical Society held there from 1935 until the outbreak of war.

War-time production at the main Hayes factory was initially channelled to Heathrow, where the Firefly Mk I monoplane made its debut in the hands of that skilful racing driver, motor cyclist and pilot, Chris Staniland. But in 1943 the first steps were taken to acquire the land compulsorily under war powers from Fairey's, the end in view being a future London Airport. For at this date victory was certain, and only its date uncertain; hence, in anticipation of the end of the war, the planners discarded the obsolete pre-war ideas of ringing London with airports and elected to pick the best possible site in the light of technical advance; not the least of which was radio and radar control of air movements.

It is of interest to note that Heathrow was requisitioned before the present M.C.A. came into existence. Air affairs during the war were run by the Air Ministry, by the Admiralty for the Fleet Air Arm, and by the now defunct Ministry of Aircraft Production on behalf of both. B.O.A.C. itself came under the control of Whitehall, and only resumed its entirely civil status after the war—indeed, it was undoubtedly for B.O.A.C. post-war that Heathrow was requisitioned under military powers during the war; and although B.O.A.C. soon became "prime user" and London Airport of international character, it was an aircraft of British South American Airways, Ltd.,* that made the first post-war civil flight from that base.

To round off the story, Fairey's finally quit Heathrow in July, 1945, moving temporarily to Heston (since closed to flying) and then to White Waltham. As White Waltham is some 17 miles from Hayes, and Heathrow barely two miles, the loss to Fairey's of the present airport was, therefore, considerable.

The famous hangar today houses the L.A.P. fire-fighting unit. On the day of my visit, airport manager Roger Pugh called for a test mobilization—a fair enough test, because the chief of the fire brigade had no warning of my coming. In just under 40 seconds from the alert, the whole unit of a dozen assorted fire engines was out on the main runway several hundred yards distant—a most impressive performance of which the showpiece was a demonstration of ultra-high pressure extinguisher that enveloped the onlookers in a dense white and exceedingly cold cloud of CO_2.

Adieu, old hangar ! We spent many happy hours in your shade.

"Flight" photograph

In 1938 : A formation of five Fairey Battles for Belgium about to take off from the Great West Aerodrome. The grass surface was so good that a car could be driven across it in comfort at a mile a minute.

**This was a few weeks before, in 1946, the company became a separate Corporation under the wing of B.O.A.C.*

MORE PRUNING AND FORCING

SINCE examining the American Aircraft Production Board's proposals for the future aircraft equipment of the U.S.A.F. and U.S.N.—listed in last week's issue—we have learned that these proposals have met with much opposition, both from the U.S. Services and from the Defence Department. The principal criticism is that the A.P.B. have been far too sweeping in their "scrap this, boost that" attitude which, if put into practice, would —it is claimed—deny the Air Force and Navy of almost any new aircraft for many months.

The A.P.B. have also produced a plan for engines; it is, if anything, more drastic than that for airframes. Briefly, it advocates increased emphasis on the Allison J-71 and General Electric J-73 so that, in addition to their present commitments, these medium size turbojets can replace the Westinghouse J-40—an engine which the A.P.B. does not favour. Secondly, the plan calls for a sort of super-priority for the Pratt and Whitney J-57 (a fine turbojet, very like the Bristol Olympus) which, on paper, is accorded no less than six vast factories for its production.

Finally—and of a particular interest to British readers—the A.P.B. appear to have a poor opinion either of British turbojets or else of the Wright Aeronautical Corporation. Wright have long held licences for the Sapphire and the Olympus, which they style the Wright J-65 and J-67 respectively. Instead of going ahead and building these engines, they redesigned them—as some maintain to remove any British influence—and, say the A.P.B., the programme has "bogged down."

But perhaps this turbojet squabble will soon be forgotten if a recent item of news from Washington is any guide; it appears that facilities costing $33m are now under construction in eastern Idaho to test the first nuclear-reactor aircraft power plant to be delivered. This sort of thing makes piston engines appear quite prehistoric.

NEW U.S.A.F. INTERCEPTERS

BEFORE very long the U.S.A.F. fighter strength will be entirely supersonic, and much of it will be unmanned. In addition to supersonic piloted, or human-monitored, fighters under development by McDonnell, North American, Republic, and Convair, are two even more advanced weapons which will not be manned at all.

The Hughes XF-98 Falcon is a very tiny fighter designed for air-launching from beneath a mother-aircraft; and presumably the "mother" will regain control after the interception has been completed and bring the XF-98 down to a safe landing at its base. The other type is the Boeing XF-99 Bowmark; this is a new departure for Boeing, who have not made a fighter for many years, and it is the natural outcome of that company's vast electronic research. The XF-99 is to be ground-launched and will, like the little Hughes, "lock-on" to its target automatically by radar and fire its own guns and/or missiles before returning to the control of the human monitor. Such aircraft should not be confused with guided missiles, for the latter are normally expendable.

FROM ALL QUARTERS

The Gloster Javelin

PERSISTENT rumours that the Gloster G.A.5 multi-purpose super-priority delta-wing fighter (with two Armstrong Siddeley Sapphire turbojets), was to be called the Spearhead were finally scotched last week with the announcement that the name Javelin has been selected by the Air Council.

In our own view this is a vastly preferable appellation—and not solely because it was one of a number suggested for new Service machines in a leading article in our issue of October 12th, 1951! As applied to a British aircraft at least, it has the further merit of novelty, though many readers will recall the Napier Javelin six-in-line engine of the 1930s.

It will also be remembered that the javelin of the ancients was a weapon of the chase as well as of war, and we may be sure that our new Swift/Hunter/Javelin pack will serve us well should the R.A.F. war-cry "Tally-ho!" ever again be heard above or around these islands.

To Whet the Appetite

AFTER each S.B.A.C. Display at Farnborough the visitor is apt to feel "Now I've seen everything—it *can't* be so good next year." But, as the yield of the twelvemonth becomes apparent, this frame of mind unfailingly gives way to a mood of impatient expectancy; and this year, perhaps more than ever before, he may look forward to the forthcoming show with confidence—for if all goes well it looks like being the best yet.

All six super-priority types will take part in the flying display—the English Electric Canberra, Fairey Gannet, Gloster Javelin, Hawker Hunter, Supermarine Swift, and Vickers Valiant—the Javelin and Swift being seen for the first time and the Valiant appearing for the first time in its present form. Another high-performance "first-timer" will be the de Havilland D.H. 110, which is to take part in the flying display.

For civil aircraft, 1952 should be a bumper year. Provided no last-minute obstacles crop up, both Britain's superb Proteus-powered prototypes should make their public debut. The Britannia will, it is hoped, be able to accumulate sufficient hours for its inclusion in the flying display, while the mighty Saunders-Roe Princess is likely to be seen as a possible herald of even greater things to come. Also appearing will be the Blackburn Universal, a de Havilland Comet (probably one for Canadian Pacific Airlines), and the second B.E.A. Vickers Viscount 701, *Sir John Franklin*. It is hoped that the big Bristol 173 twin-engined helicopter will give a flying display—its first public appearance—in which it would be ably backed-up by the Bristol Sycamore, Westland S.55, and three variants of the Saunders-Roe Skeeter.

A vast amount of new equipment will be displayed in the exhibition hall; the number of exhibitors' stands is a record. Finally, but by no means least, there are certain aircraft which if, they make their first flights in time, will also be seen by the Farnborough crowds. In several parts of England an unusually large number of new—and, in some cases, rather awe-inspiring—aircraft are being given their final polish before their initial flight tests. If all goes well these most interesting machines will be able to show the world what certain companies have been doing during the past few years. And we must not forget the guided-weapon picture, which will be brought a little more into the public eye.

Hawker-Siddeley Australian Plans

THE Hawker-Siddeley Group's representative in the South Pacific, Air Chief Marshal Sir Keith Park, discussed in a recent Melbourne interview the company's plans for extending its operations to Australia. He indicated that the group contemplated establishing plants for the construction of gas turbines and aircraft, for gas-turbine repairs and maintenance and for making long-range weapons.

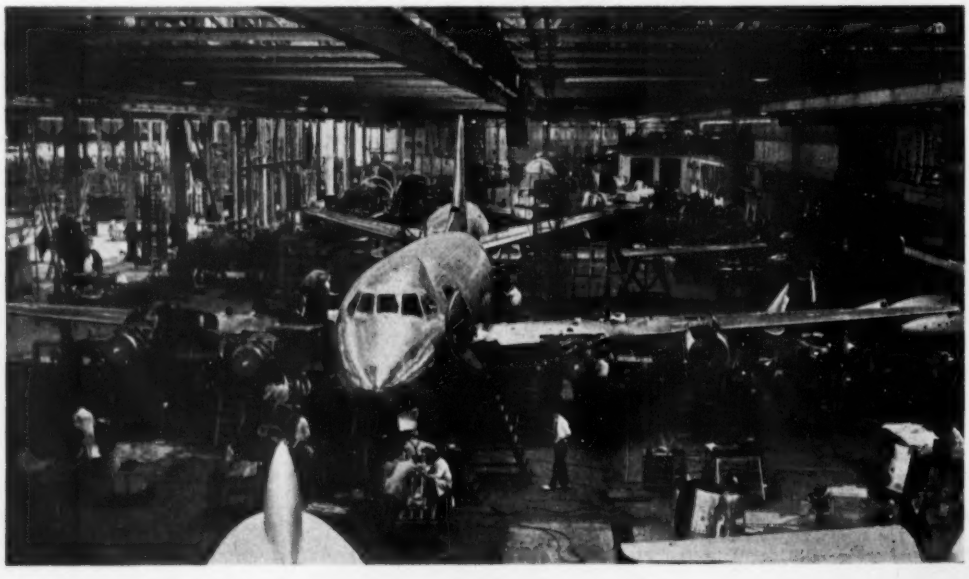
The group believed that it must decentralize throughout the British Commonwealth as a protection in the event of a third world war. Australia should emulate Britain and the United States of America by giving top priority in expenditure and facilities for expansion to the Air Force.

Sir Keith said he considered that Australia must be in a position not only to service gas turbines, but to take her place again as a strong centre of manufacture. The company aimed to do what it was doing in Canada—to employ 95 per cent of local workers with a few key posts held by Britons.

One complaint about the manufacturing end of the aircraft industry in Australia was that the cost of the finished article was high. This, he said, was due to the fact that the cost of establishing a factory, and tooling up, for an order of say 50 aircraft, was out of all proportion to the value of the aircraft.

"There is a way to cheapen production," added Sir Keith Park. "I would like to see Australia get together with New Zealand and, possibly, Pakistan and India on this. If Australia received orders from the Dominions and other places, production costs would decline sharply—by as much as 33 per cent."

LORDLY LINE: Vickers Armstrongs Viscounts are seen to be well advanced on the production line at Weybridge. Known in B.E.A. by the class-name Discovery, the Viscount is also on order for Air France, Aer Lingus and Trans-Australia Airlines. The second production machine—G-ALWF ("Sir John Franklin")—is expected at the S.B.A.C. Display next month.



NORTHERN LIGHTERMEN

Some of the Short Sunderlands of No. 230 Squadron, Pembroke Dock, at their moorings in Young Sound, Greenland, whence they are taking stores (seen in the foreground) to the British North Greenland Expedition's base at Britannia Lake, 888 miles from the North Pole. A note on the operation appears on page 194.

Hayhow's Longest

LAST Saturday, August 9th, was a very full flying day for Tom Hayhow. In the light of dawn and Croydon's floodlights he took off under R.Ae.C. observation in his well known Auster Aiglet *Liege Lady* at 5 a.m. and set course for Bromma, Stockholm, 895 miles away. Aided by a strong tailwind, he made a direct North Sea crossing at between 5,000 and 10,000ft, beating (subject to confirmation) Capt. Jan Christie's record for the journey: his time was but 6 hr 37 min 45.9 sec, equivalent to a ground speed of 134.46 m.p.h. The yellow G-AMOS was then refuelled in some 24 min for the return trip.

The wind was now a severe handicap, and Hayhow followed a more coastal track; and, as fuel was more critical on this return journey, he had to put down at Leeuwarden, Holland, to take on additional petrol. This resulted in a return figure of 8 hr 43 min 18.6 sec, equal to 102.19 m.p.h., and a Croydon-Bromma-Croydon result of 15 hr 45 min 08.5 sec, or 113.17 m.p.h. Needless to say, Hayhow's Decca Navigator was again a great help.

Hayhow is not yet through with records—tomorrow, August 16th, he plans to take *Liege Lady* to Madrid and back, between the airfields of Denham and Cuatro Vientos.

Red Medley

ROTORPLANE development in the Soviet Union is believed to be proceeding on quite a large scale, although only one modern helicopter—a design which has been credited to Mikhail Mil—is at all well known outside Russia. But Russian helicopters have certainly reached the operational stage, and it is significant to find that at the Red Navy Day, last Sunday, helicopters took part in a big display on the Moskva-Volga canal. They are reported to have assisted in a beachhead landing and to have demonstrated take-offs from land, water, and ships under way.

From Vienna comes the news that a twin-jet aircraft of the Russian Air Force crashed in Essling, an eastern suburb of the city, last Friday, August 8th. The aircraft, presumably a "Type 27" bomber, caught fire in the air and brought down electric power cables, telephone lines, and a chimney, before burying itself in a field and exploding. One of the crew of three escaped by parachute.

From Korea it is learned that no fewer than 21 Mig-15s were destroyed in air combat in the first week of August, and it is worthy of note that at least one of these succumbed to an attack by a Royal Naval Sea Fury, a piston-engined fighter over 200 m.p.h. slower than the Mig.

Sullom Voe Again

THREE R.A.F. Commands—Coastal, Bomber and Flying Training—will take part in Exercise Mainbrace, which starts on September 13th and will last about 12 days. Aircraft of Coastal Command will operate from Norwegian bases as well as from most of the Command's permanent stations in the United Kingdom. Two squadrons of Shackletons will operate from Sola (Stavanger) and one squadron of Sunderlands will be based at Trondheim. Another Sunderland squadron will be at Sullom Voe in the Shetlands, where a flying-boat base is being reopened for the exercise—the first time it has been used since the war.

Coastal Command aircraft will be attached to the Blue forces, with the exception of two Lancaster squadrons allocated to the Orange force. Bomber and Flying Training Command will operate with the Orange forces; medium-sized forces of Washingtons and Lincolns will make high-level raids on Blue shipping, and other Bomber Command aircraft will undertake mining. Flying Training Command will carry out medium-level raids on Blue shipping, with Varsities, Lincolns and Wellingtons.

German Rocket Mail

MANY readers will remember the series of experiments with powder rockets in Germany before 1939, when several launchings were made with token payloads of mail. The technology of this sphere of activity has advanced greatly in recent years, and it is interesting to note that a number of engineers who once worked on the notorious A.4 ("V-2") rockets have formed themselves into a group ostensibly to perfect a mail-carrying guided rocket. They have already carried out one test launch from a 20ft ramp sited on the heathland behind Bremen.

Professor Puellenberg, the leader of the project, is reported to have said, "We had some trouble finding the correct detonator, but hope to go ahead now. If we can get backing from the German Post Office, we hope to open rocket deliveries up to 20 miles, and within four years we can have a chain covering the whole of Germany." Their rocket—progress of which is being carefully watched by the British occupying authorities—is stated to carry a payload of 660 lb and to be capable of guidance to a target "the size of a postage stamp." (!)

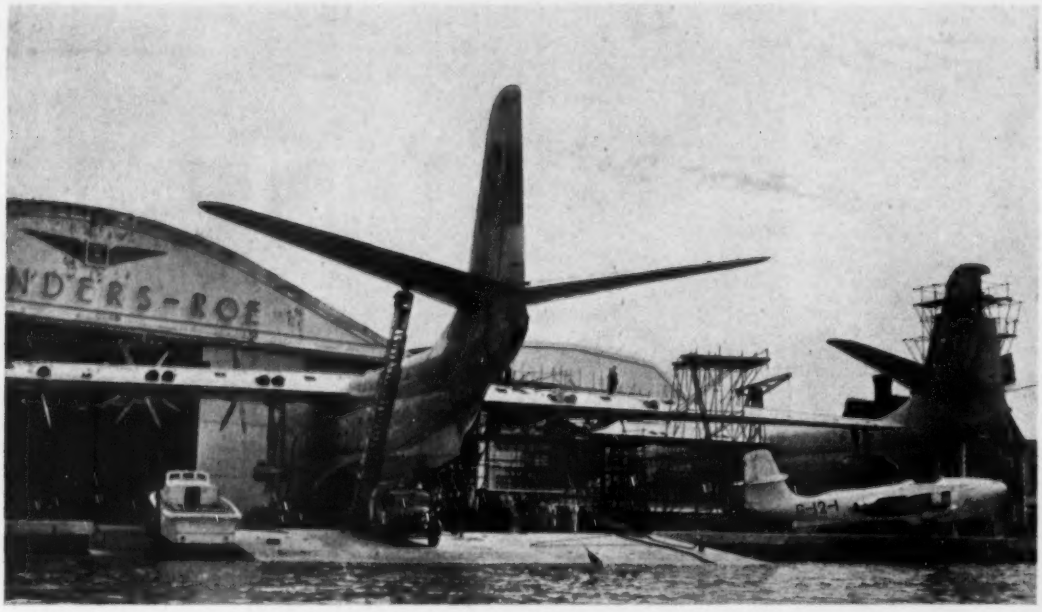
Continental Introductions

FOUR civil aircraft types well known in their native lands, but new to this country, are likely to be seen here before very long. Aerocontacts, Ltd., of Gatwick Airport, Surrey, hold the British Commonwealth agency rights for the Piaggio P.136 twin-pusher amphibian and the P.148 two/three-seat tourer and trainer. Both these pleasant machines may be over here this year, together with two other aircraft which Aerocontacts are in a position to distribute: the DC-3 with a Palas booster turbojet under the fuselage and the S.O. 30P Bretagne transport.

And Pastures New

FROM Field Aircraft Services, Ltd., Croydon, comes news that Mr. F. C. Cooke, M.I.P.E., has been appointed their general production manager. Mr. Cooke started his engineering career as an apprentice in the motor industry, went on to the de Havilland Aeronautical Technical School in 1930, and later joined the de Havilland Aircraft Co. at Hatfield. In 1935 he transferred to the Bristol Aircraft Co., and his last appointment was with Folland Aircraft, Ltd., where he served during the war, ending as chief planning engineer. Mr. Cooke served for four years, from 1931 to 1935, in No. 604 (County of Middlesex) Sqn., R.Aux.A.F.

Field Aircraft Services have works at Croydon, Nottingham and Bovingdon. At Nottingham, work at present in hand includes the overhaul and conversion of Dakotas for East African Airways and British European Airways, while the production division is working on components contracts for a number of leading British constructors.



THE ISLAND PRINCESSES: The launch and maiden flight of the first Saunders-Roe Princess draws near, and hopes are strong that the great flying-boat will be seen over Farnborough next month. Registered G-ALUN, she is seen at Cowes in company with one of her sister craft G-ALUO and with the S.R./A1 experimental jet fighter flying-boat. G-ALUO will be cocooned and the third Princess will be stored as parts.

HERE AND THERE

The Korean Air War

SOME 6,500 gallons of napalm and 268 tons of bombs were dropped by U.N. aircraft in 275 sorties made in one day's attacks on Communist headquarters near Pyongyang last week. Sabres, flying as top-cover, engaged 17 Mig-15s, destroying one and damaging another. Fifth Air Force H.Q. claimed during the week that 1,000 Mig-15s had been destroyed, probably destroyed or damaged since the start of the Korean war.

E.S.V.I.P.

EVIDENTLY the DC-3 used by H.M. King Ibn Saud of Saudi Arabia (illustrated on p. 639 of *Flight* for May 23rd, 1952) is no longer considered capable of upholding the Royal prestige in the face of modern airline competition. A DC-4 is now in the shops of Transocean Airlines at Oakland, California, for conversion into what must be the most extra-special V.I.P. aircraft yet. Among other fittings will be a royal bed and an elevated, revolving throne complete with safety belt.

Faster and Higher ?

BEARING in mind the keen rivalry between the American armed forces, it must have been very irksome for the U.S.A.F. to have been unable to approach the speed/altitude figures set by the Naval Skyrocket over a year ago. But the Bell X-2 has now been delivered, and even more impressive performances may be expected from this new acquisition of the Air Force. The original supersonic aircraft was, of course, the Bell X-1 (or, as it was then styled, XS-1); the new Bell is considerably larger and is "all-swept" to an unusual degree. The fuselage is made of K-Monel, a nickel-copper-aluminium alloy, and the wings and tail are reported to be entirely fabricated from stainless steel. Power is supplied by a Curtiss rocket unit providing up to 15,000 lb thrust, controlled by a throttle. The performance expected is of the order of 1,500 m.p.h. plus, above 100,000ft.

The French Air Attaché

A RECENT note on the appointment of Cmdt. Andlauer to succeed Cmdt. Derimay at the French Embassy should have made it clear that the post referred to was that of Assistant Air Attaché; the Air Attaché is Col. H. de Rancourt de Mimerand, C.B.E., D.F.C., A.F.C.

Pukka or Duff ?

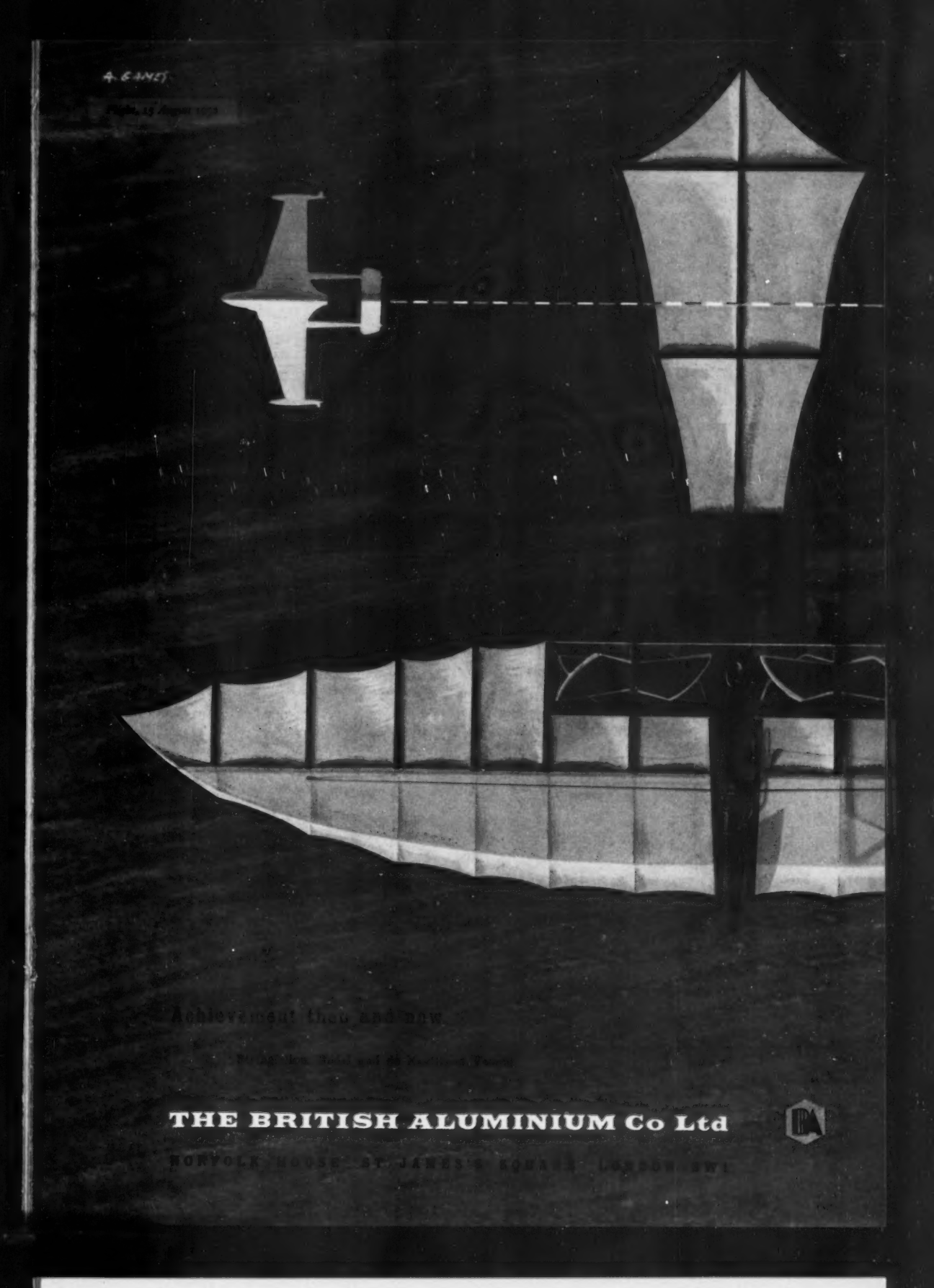
ACCORDING to our American contemporary *Aviation Week*, a military transport version of the Britannia is on the drawing board "along with sketches of a Valiant jet transport." Another item of interest from the same source, but in more definite terms, is the existence of a Hawker Hunter 2, with "about 7 deg more sweep . . . powered with Sapphires." Assuming that the plurality of engines is an error, this appears quite a possible development; in fact, the report goes on to say that the Hawker Siddeley Group hope to make the Sapphire standard in the Hunter, but that the first aircraft of this type to go into service will use the Avon.

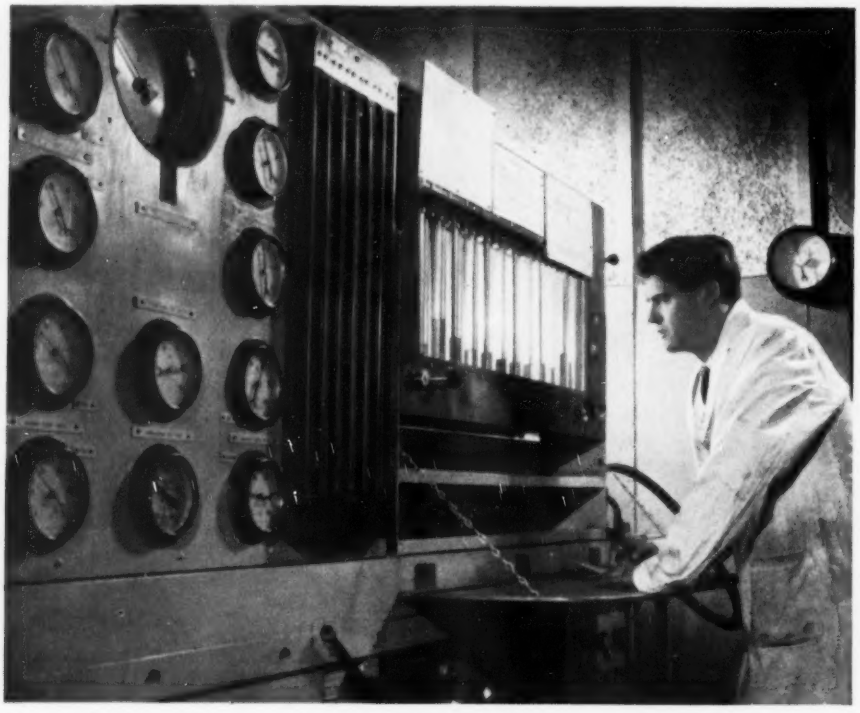
Records Confirmed

RECORDS recently confirmed by the F.A.I. include, in addition to those gained by T. W. Hayhow (Auster Aiglet) on May 30th and June 7th, Max Conrad's Piper Pacer flight from Los Angeles to Jackson Heights, N.Y.; this ranks as a straight-line distance record in Class C.1b (aeroplanes, 500–1,000 kg), 3,962.75 km (2,462 miles) having been covered. Also confirmed is Paul Burniat's 2,000 km closed-circuit record, made in Belgium last June on a Beechcraft Bonanza at 255.78 km/hr (158.9 m.p.h.).

Farnborough Prices

FOR the information of those who still seem uncertain about S.B.A.C. Show dates and prices, we repeat here that from September 1st to 4th (the Monday to the Thursday) admission is restricted; the public days are the 5th, 6th, and 7th—the Friday, Saturday and Sunday. On the Friday, 10s. (children under 16, 5s.) will be the admission charge; cars, with occupants up to their normal capacity, will be charged at £3 (or—for those booking in advance—at a parking fee of 10s, with individual passenger charges at the 10s and 5s figure quoted). On the two remaining days, the prices will be 5s (children 2s 6d), and for cars, with occupants, £1 10s. Full details—including those of charges for motor coaches, motor cycles, and cycles—are obtainable from the advance-booking agents, Auto-Parks, Ltd., 1 Maclise Road, London W.14 (Shepherds Bush 5385). On page 172 is a note on aircraft likely to appear at Farnborough.


A. BANES
Achievement then and now
THE BRITISH ALUMINIUM Co Ltd
NORFOLK HOUSE ST JAMES'S SQUARE LONDON SW1



Fuel Research Laboratory : Test rig for calibrating fuel injection pumps.

Working for Britain's Future

Today, the importance of research is paramount. New basic problems follow great innovations such as the gas turbine : older problems await realisation — and day by day each new development needs the *ad hoc* application of research techniques to determine functional efficiency, fitness for purpose and mechanical stamina. Long and short-term research projects occupy much of Napier's resources today, preparing for Britain's needs of tomorrow.

NAPIER

NSP.4

D. NAPIER AND SON LIMITED · LONDON · W.3

RISING WIND: That Marcel Dassault MD450 Ouragan fighters (Hispano-Suiza Nene) are at last about to pass into operational service with the French Air Force is suggested by this picture of Ouragans, fresh from the production line, at Dassault's Bordeaux-Merignac plant.

HERE AND THERE . . .

Progress on Show

NOW being held at the Hove Museum of Art (and open until August 24th) is an imaginatively organized exhibition entitled *British Transport Through the Ages*. Photographs and models illustrate every means of progression from the pack-horse to the Comet.

For the Benevolent Fund

AN oil painting, *Air Raid on Convoy*, by the late Julius Olsson, R.A., presented to the R.A.F. Benevolent Fund by his widow, has been bought for £120 by R.A.F. Gibraltar, and will hang in the officers' mess there. The Fund has also received more than £33 in tribute to the memory of Lady Whitten-Brown, widow of the pioneer who flew the Atlantic with Alcock in 1920. Lady Whitten-Brown died at Swansea on May 1st; she had asked that donations should be sent to the R.A.F. Benevolent Fund in lieu of wreaths at her funeral.

Marlins Ordered

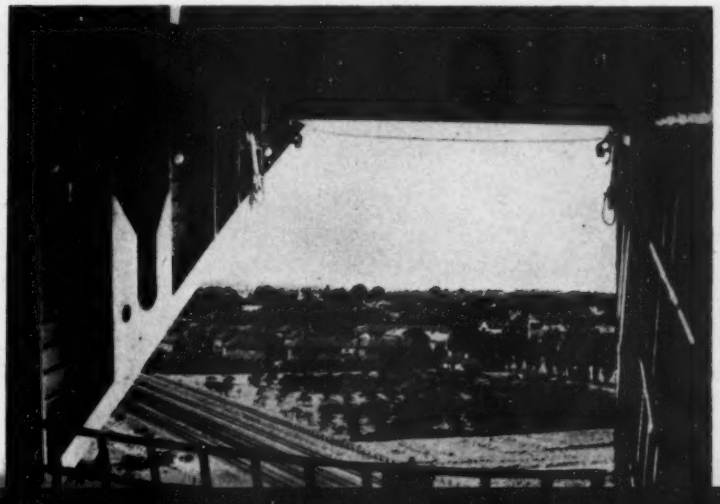
A NEW order for the Martin P5M-1 Marlin for the U.S. Navy and an initial order for an air-sea rescue version for the U.S. Coast Guard were announced recently. The U.S.N. order is the fifth in a series received by the company for the Marlin, which went into active service when deliveries began to Squadron VP-44 at Norfolk, Va., on April 23rd. The Coast Guard version will include search radar, sea rescue equipment, and soundproofed, heated compartments for survivors. The Coast Guard has been using Martin PBM Mariners for many years.

TURBOPROP MAIL carried from Edwards Air Force Base, California, to Indianapolis, Indiana, in the Allison-Convair Turbo-liner, "the first U.S. turboprop aircraft to fly cross-country." The airscrews used on this aircraft were made by Aeroproducts Division of General Motors.

Productive Journey

THE Travelling Scholarship to the United States which is awarded by the Institute of Industrial Administration in conjunction with the English Speaking Union has this year been won by Mr. H. C. Wiltshire, M.Sc., M.I.Mech.E., M.I.E.E., M.I.I.A., who is deputy head of the Department of Aircraft Economics and Production at the College of Aeronautics. Mr. Wiltshire will sail on September 11th, and while in America will visit universities and industrial plants with the object of seeing some of the best practices in teaching and production management. He will return to this country on October 22nd.

ROOM WITH A VIEW: The Blackburn Universal is currently flying minus rear loading doors and ramp, a net being provided for the mental comfort of the flight crew. This photograph shows the view astern as the aircraft crosses the railway on the approach to Blackburn's base at Brough.



IN BRIEF

FROM Blackburn and General Aircraft comes the announcement that Mr. Frank Gannon, of British Aircraft and Engineering Co., Pty., Ltd., 160, Castlereagh Street, Sydney, has been appointed principal Australasian agent for the Universal Freighter and Cirrus engines.

* * *

The London sales office of Britannia Batteries, Ltd., has been transferred to new premises at 53, Victoria Street, S.W.1 (Abbey 6168-9).

* * *

Mr. L. de Wynter has been appointed manager of the Ipswich branch of British Insulated Callender's Cables, Ltd., in succession to Mr. A. R. Driessen, who has been appointed commercial manager of the Indian Cable Co., Ltd.

* * *

The Council of the British Plastics Federation is considering the establishment of a section to cater for firms interested in reinforced low-pressure glass-fibre plastics. Any non-member firms interested are asked to communicate with the director of the B.P.F. at 47, Piccadilly, London, W.1.

* * *

No. 2 issue of *Racal Review*, published by Racal, Ltd., 41 Kingsway, London W.C.2 (Temple Bar 9781), gives an informative review of the communications planning and provision service offeted by the company and its associated Canadian organization. Also included is a note on Racal Aerotronics, Ltd., whose radio/radar servicing is conducted at Blackbushe.

* * *

To help firms which regularly send their goods by road, or which run their own transport, the August 16th issue of *Motor Transport* will include a completely revised set of road transport cost tables. These will give standing costs per year, week and hour, running cost per mile, and total charge per mile over a range of annual mileages for each size of vehicle according to the district in which it is based.

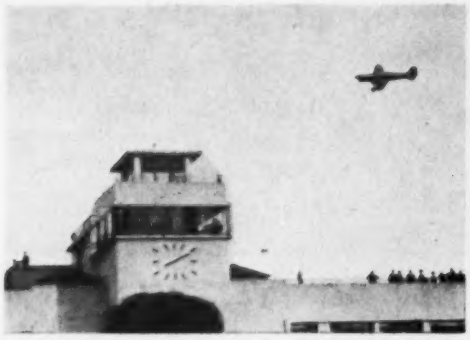
D

"EXPRESS" RACE IN RETROSPECT

Pictorial Echoes of the South Coast Contest

AN illustrated account of the race for the *Daily Express* International Trophy was printed last week; now we present further pictorial indication of the activity which was to be seen at Shoreham and along the 183-mile course once the weather had cleared up. There was a field of 43, of which 38 finished. Bennett in the Proctor 5 was fortunate to suffer no more than damage as a result of hitting the sea at full speed. Bowles put down safely in a field—as on an earlier occasion.

It is interesting to compare the average speeds attained in this race with those achieved by the same aircraft at Newcastle three weeks earlier. Averages would naturally be slightly higher on the longer course with fewer turns, although more fuel was carried and some aircraft needed auxiliary tanks. Somers, for example, averaged 169.5 m.p.h. round the King's Cup course and 177 along the South Coast; the Gipsy Major engines had been retuned, but apparently his end-plates (see photograph) and the absence of slats also helped. It is remarkable, on reflection, that at Newcastle Dunkerley was able to achieve 165.5 m.p.h. with one wheel down and no more than 175 m.p.h. with both up in the *Express* race. The King's Cup winner, Gregory, was consistent, adding only 2½ m.p.h. to his Plus D's average speed on the long course. Jimmy Rush was able to find another 5 m.p.h., and Marler's Falcon Six 3 m.p.h. The 135 m.p.h. which brought third place to the Italian Ambrosini Rondone



Signor Ferrari, who was second in the Ambrosini S.7, prepares to land back at Shoreham after the finish. It was already past 8 p.m.

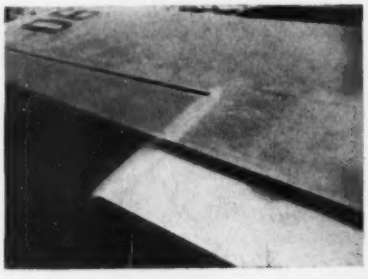
A comely lightweight with Gipsy Minor engine of only 90 h.p., the Coupé Moth Minor, here seen at the start, averaged 133 m.p.h.

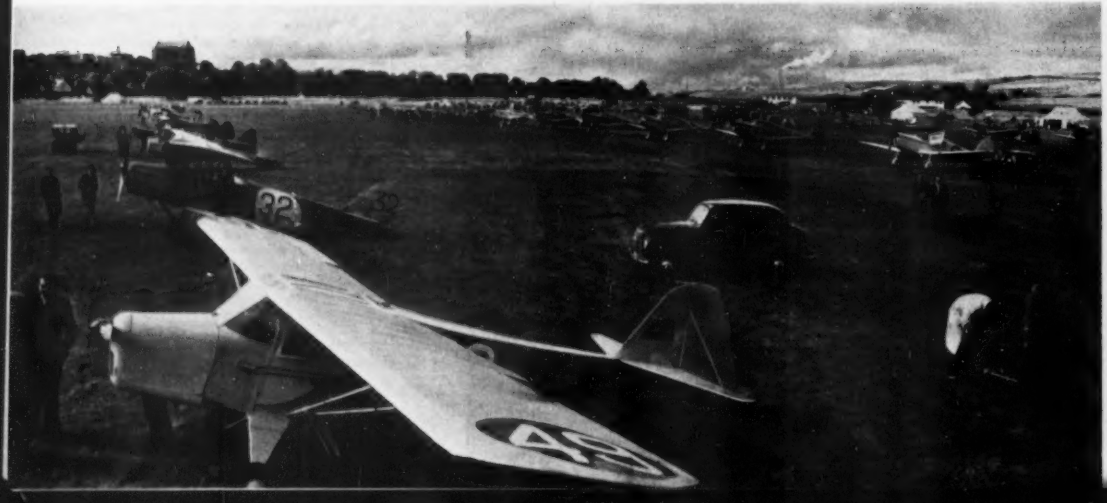
"Flight" photographs

Fitting of end-plates on the flaps and removal of the fixed leading-edge slats were steps taken by Somers to increase the speed of his Gipsy Major Gemini 3.

(Right) The detachable part-moulded enclosure on Clear's Comper Swift.

(Below) Lines of competing aircraft stand by while the weather clears slowly at the farthest points of the course. Lancing College is seen in the background.





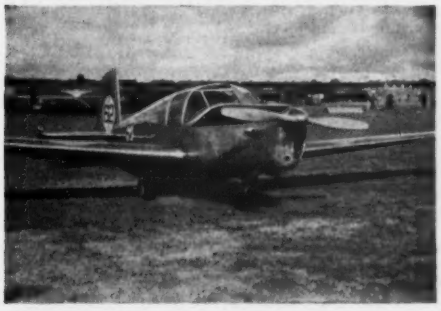
A section of the long Proctor line-up with the winner just visible five places from the starter's flag.

was a remarkable performance with an engine of only 65 h.p.

The introduction of the British air-racing championship, which is judged on the basis of points gained in qualifying races during the season, has added considerably to the interest of individual events. The winner will receive the Royal Aero Club Jubilee Trophy and £100.

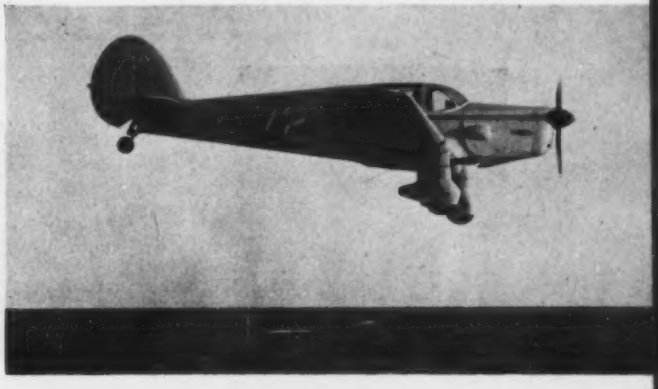
There remains one more event for 1952—the Siddeley Trophy Race, due to take place at Coventry on August 23rd, from which championship points can be gained. The positions after the *Daily Express* Race were tabulated last week. It is apparent that the top men in the order, W. P. I. Fillingham (52 points), C. Gregory (50), G. R. I. Parker (46) and J. Rush (39), stand a very good chance of keeping their lead. Names such as those of Dunkerley, Paine and Somers, all now racing veterans and members of the Throttle Benders' Union, unexpectedly appear quite low on the list, with only about half the points held by the leaders.

Beverley Snook's Tiger Moth is featured in this striking photograph at Beachy Head lighthouse.



(Left) Captain Bissmarck's Safir has a Gipsy Major 10 with hand-controlled v.p. airscrew. (Above) It is to be hoped that everything was in order on the Ambrosini Rondone F.4, third machine over the line.

(Below) W/C. McIntosh smiles from the cockpit of his Proctor 1 after learning that he was the winner of this year's "Daily Express" race. (Right) He is seen skimming over the sea at more than 160 m.p.h.



A York sets course for Helsinki, its rugged appearance enhanced by the smart civil colour-scheme.

XXTH-CENTURY PEGASUS

Foxhunter and his Team-mates Fly to and from The Olympic Games

ALMOST every species of animal seems to have been carried by air, and there have been very few which have not taken kindly to this mode of travel. From the owner's point of view, carriage by air offers many great advantages, the chief of which are convenience and speed. There is little or no danger, and such matters as feeding and attention on a 12-hour flight must be compared with provisioning, care and exercise for, say, a three-week sea journey.

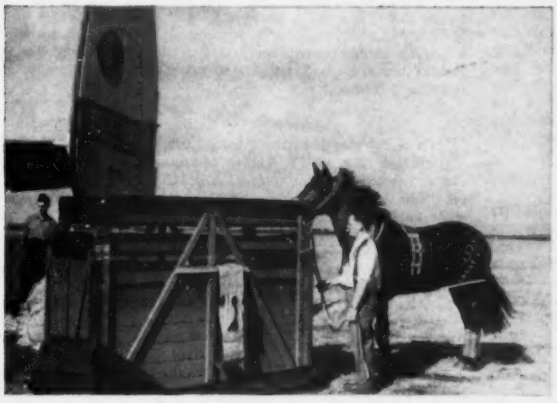
Horses and their riders are regularly flown, and it was not surprising that the British and Canadian Olympic equestrian teams chose the air as the means of travelling to and from Helsinki. Yorks operated by Skyways of London (Lancashire Aircraft Corporation) were selected for these particular flights, which started on July 18th. The Canadians took off from Filton on July 22nd, the British three-day horse team followed from Filton on July 24th, and on July 30th the British show jumping team, including Colonel Llewellyn and Foxhunter, took off from Blackbushe, where the accompanying pictures were taken.

It is understood that the animals seemed to enjoy the flights, and certainly the magnificent performance put up by Foxhunter (who, with Col. Llewellyn in the saddle, gained one of Britain's only two gold medals) confirms that he at least suffered no ill-effects. The success of the operations led to the American equestrian teams deciding to fly back to Bristol from Helsinki in the same manner.

Yorks are easily adapted for the carriage of horse-boxes, and the boxes themselves vary in size according to the requirements of the animal to occupy them. During the period of the Games, Skyways' Yorks made 26 round trips, 19 of them with competitors and seven with horses.

(Above) Equine V.I.P. Foxhunter flew to and from Helsinki by York and brought back an Olympic Gold Medal. (Below, left) Col. Llewellyn, owner and rider of Foxhunter, with Mr. Eric Rylands, managing director of Skyways of London. (Below, right) Aircrew of the York were (left to right) A. Norwood, navigator; J. A. Davis, radio officer; J. Furber, captain; A. V. Donati, first officer. "Flight" photographs

The British team of horses, Foxhunter, Nizefella and Atherlow, all apparently quite unconcerned, are led round their aerial "horse-box" at Blackbushe.



Horses are suspicious of unfamiliar surroundings, so each one was introduced to his box before embarking, as shown on the right. (Below) Quickly removable boxes installed in the York. The large one, left, is for Foxhunter. "Flight" photographs

Our American Correspondent Reports . . .

THE release by the United States Navy of the long-rumoured news that the Douglas D-558-2 Skyrocket (a U.S.N. project) had exceeded a speed of 1,200 miles per hour and a height of 79,000ft was no great surprise. But the reason why the release was made was interesting, and hardly one which could have pleased the Navy's public relations office. On July 16th the *New York Times*—among other papers—printed a story under the headline "1,300-mile Jet Speed Disclosed in Error." They went on to say, ". . . at an air show at Edwardes last Saturday . . . an Air Force major, speaking over a public-address system, said the Skyrocket had flown more than 1,300 miles an hour. A fellow-officer said later that the announcer had been authorized only to say that the plane was capable of that speed . . ."

The flights were, of course, those made by Bill Bridgeman, the Douglas test pilot, in August of 1951, when the Skyrocket was launched from a B-29 at some 30,000ft. Earlier this year an article in the Fairchild house magazine *Pegasus* said that on one of these flights a height of "more than 79,000ft" had been reached. The actual figures released by the Navy were 1,238 m.p.h. and 79,494ft. It was unfortunate in the circumstances that the major's statement was made to a group of newspapermen, which assured the widest publicity for the story.

• • •

BUT this incident does highlight some of the difficulties which surround the keeping of secrets in a country where differences between Security and Secrecy are not always clearly defined. The trouble arises because Americans are naturally unaccustomed to silence over matters which might be the subject of technical congratulation. It is a general, and perfectly understandable, feeling here that achievements are things to be discussed and in which to take pride and pleasure—and any organization or manufacturer is considered foolish not to let people know about his exploits. Moreover, before 1941 there was little or no need for any security requirements in the States; and military secrecy is, by nature, foreign to the average American. In consequence, the Security people have a tough time trying to hold a balance between the national welfare, the Press and the publicity departments of the Services, and the manufacturers. This sometimes results in actions which seem illogical, or in a degree of secrecy which seems unnecessary, or in the imposition of security where there need be none.

But even if there was a mix-up in this case, it doesn't alter the fact that the success of the Skyrocket programme was most remarkable, and that it was an achievement just as important as the original Bell XS-1 supersonic flight. All concerned should be very proud of it. Apropos of the figures, however, those who deal with performance matters will probably be envious of the extreme accuracy with which these have apparently been computed. No round figures, even at 79,494ft!

• • •

A FEW weeks ago (June 27th) this column gave some data on helicopter development. Since then, Los Angeles Airways have taken delivery of their second Sikorsky S.55 and have started a freight service with these aircraft in the Los Angeles area, while New York Airways have ordered three for mail services around that city. The Jacobs Aircraft Engine Co. have also come out with plans for what they say will be "a five-place single-engined helicopter with a three-bladed rotor, stub wings and a pusher propeller." The all-up weight is given as 3,258 lb for normal operation, and a 350-h.p. Jacobs engine will be used. Rotor blades will be "single-piece aluminium." The preliminary performance figures seem rather on the optimistic side: maximum speed is to be 186 m.p.h., with cruising 150 m.p.h. and a four-hour endurance at normal all-up weight. Higher figures are claimed for lower weights.

The future delivery schedule for civil-use helicopters has also been published. These figures (which do not include any military production) are issued by the government department responsible for the allocation of strategic materials. They specify 106 helicopters for 1952, 312 for 1953 and 267 for 1954. The breakdown by manufacturers is as follows:—

	1952	1953	1954
Bell Aircraft Corp.	37	112	60
Doman Helicopters Inc.	—	3	15
McDonnell Aircraft	48	144	144
McCulloch Motors Corp.	19	48	48
Sikorsky Aircraft (S.55)	2	5	—

These figures are presumably provisional—for 1953 and 1954, anyhow—and as yet we have seen no statements on the civil production rates (if any) of such companies as Piasecki, Kellett, Kaman, or Hiller, all of whom have types in production, or close to production, which might have civil application. Other U.S. concerns not mentioned in this list are American Helicopter Co., Inc., of Manhattan Beach, Calif.; the Autogiro Co. of America, Philadelphia; Eastern Rotorcraft Corp., Philadelphia; Gyrodyne Company of America, New York; and others. Nor is any mention made of the big twin-rotor Sikorsky S.56, which will have two Pratt and Whitney R.2800 engines, so presumably this latter is entirely a Service development, anyhow for the time being; but it should make a good passenger vehicle if and when it is ultimately released.

• • •

THE Civil Aeronautics Board have issued some figures covering last year's airline operations. The American carriers between them took 24,679,232 passengers in 1951. Of these, 22,635,822 were domestic passengers and 2,043,410 were international. This total compares with 19,000,000 (approximately) for 1950 and 16,000,000 for 1949. The figure for 1941 was 4,077,000. The 1951 passenger-mile figure was up to 13,684,817,000, as compared with 10,700,000,000 (approximately) for 1950. The accident-rate for this last year was the same as for the year before, being 1.3 per 100 million passenger miles. Actually, there were 173 passenger fatalities for 1951, plus 33 crew casualties, against 144 and 21 for 1950.

Among the domestic carriers it appears that American Airlines had the best load-factor, for they reported a figure of 87 per cent for 1951, with North West Airlines next at 79 and T.W.A. with 78.

• • •

ALTHOUGH operators have been able to hold the accident rate statistically constant, there is some concern because of the increased size and increased seating density of the newer aircraft. So far there has not been a fatal accident to a fully loaded tourist-fare machine. But under the law of averages this *may* happen one day, and the shock of hearing of some 90 or more fatalities in one accident will have a profound effect on the travelling public. There can be an additional danger in high-density seating, that of evacuation of the aircraft in the case of emergency. The new C.A.A. regulations on emergency exits are designed to cope with such a situation; but, having travelled in some of these aircraft, your correspondent feels that however good the briefing, and however efficient the discipline and the crew assistance, the existing exits are never going to be able to take care of all the passengers in the event of ditching or even a slow-spreading fire, even assuming there is no panic. Without wishing to be too depressing, it does not seem to be outside the bounds of possibility that even a moderately severe accident of this nature, accompanied by panic and its associated additional death toll, would create such a public outcry that the seating density of some of the existing types might have to be reduced.

2 out of 3

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T A S
OF BRAZIL

have chosen the Heron

From São Salvador (Capital of the State of Bahia) we shall organise flights to the North with a stop at the City of Cipo, continuing in the direction to the famous waterfall called Paulo Affonso. The City of Cipo is a thermal health resort and is well known throughout Brazil. Paulo Affonso, the biggest waterfall of this country, is nearing its completion with an enormous hydro-electric plant, a masterpiece of engineering, which can be considered as one of the most important steps in the history of the North-Eastern States of Brazil.

From São Salvador to the West we shall fly via Bom Jesus de Lapa, a place for pilgrimage of the Catholics, a celebrated sanctuary at the banks of Rio S. Francisco, and likewise a point of commercial crossing between the Atlantic Coast and the West. From Bom Jesus we shall continue up to Santa Ana, Santa Maria, Correntina, returning on the same day. Means of transportation in these places are very scarce, due to the fact that there are no rail-roads and the few roadways become practically unserviceable as a consequence of a spell of bad weather.

From Sao Salvador to the South we shall use the very productive region of Tabasco and Cacao, stopping at the Cities of Sto. Antonio de Jesus, Jequie, Itacare, Itabuna, Ilheus, Canavieiras, Belmonte and the cattle region of Itambe.

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ILSY

Magnificent International Display at Ypenburg

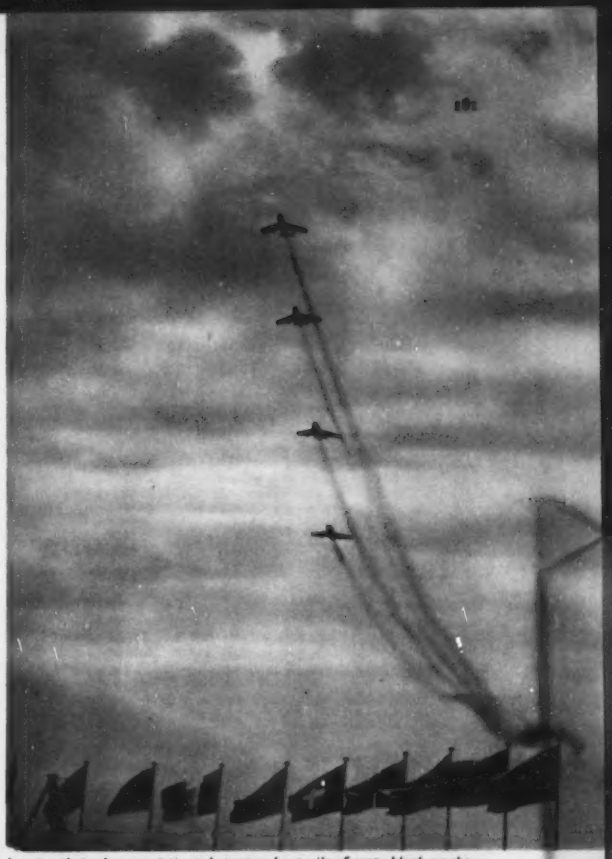
Illustrated with "Flight" Photographs

OUTSTANDING from every aspect was the two-day festival of military, commercial and sporting aviation held at Ypenburg, the Hague, on August 2nd-3rd. The display, entitled ILSY (International Luchtvaart Show Ypenburg) was the fourth in the annual series organized by the Royal Netherlands Flying Club. Maj. Jan Flinterman, holder of the Dutch national speed and altitude records, supervised the 3½-hour flying programme, which was witnessed on both the Saturday and Sunday by enthusiastic crowds some 50,000 strong—the total attendance being 25 per cent greater than in 1951. Situated on the main highway between the Hague and Rotterdam, Ypenburg is a comparatively small grass airfield unsuitable for jet aircraft; nevertheless, the timing of the programme was so precise that jets operating from Schiphol and other large airfields were able to demonstrate at Ypenburg in a non-stop sequence which would not have shamed the Farnborough traffic-controllers.

To the accompaniment of rousing music from the massed bands of the Limburg Rifles and the Shell company, bluejackets of the Dutch Naval Air Service broke the flags of the participating N.A.T.O. countries and the national anthem was played. Against a fluttering backcloth of bright colours, the Minister for Transport and Waterways then stepped forward with a brief speech declaring the display open; fanfares were played, and as the trumpet notes faded two Sikorsky H-19 helicopters swept into the airfield circuit in a whirl of sound, circled once and descended before the tribunes. The timely arrival of the transatlantic machines, whose previous travels *en route* to Europe are recounted on pages 187-8, had been prompted by a K.L.M. request at short notice to the U.S.A.F. Dutch pioneer Dr. Albert Plesman, president of the airline, soon moved to the microphone to deliver, in English, a short speech welcoming the American pilots. Before the silver Sikorskys' rotors had stopped, 27 Harvards of the Air Training Command flew across the field in four faultless formations spelling "ILSY." As the trainers passed the western boundary, 32 Thunderjets of the Dutch Tactical Air Force sped in from the south with smoky trails, to be followed within seconds by 56 Meteor 8s of the Air Defence Command.

Two more Harvards of the Dutch Air Force then appeared, one carrying two red banners at the wing-tips, the other bearing hooks and faced with the formidable task of picking-up the streamers from Harvard No. 1. Each attempt brought a rasping scream from No. 2's airscrew as the pilot increased r.p.m. to keep station. Tense spectators were relieved when, after three runs, the banners were safely flying from the second machine, but before they could relax one of the flags was re-transferred—to the tailplane-tip of the first Harvard. The Dutch Air Force kept up the pace with mock-bombing attacks on the airfield by four F-84s and aerobatics by three more Thunderjets, with a demonstration of fire-fighting between these items.

An exhibition by Louis Notteghem, head of the French National Aviation Centre at St. Yan, was the first of several fine individual aerobatic performances. Notteghem flew his single-seat Stampe Special with great precision, a classic figure-eight manœuvre—made up of a loop and a bunt—being the highlight of his performance. In addition to stall-turns and very low flick-rolls, he also completed a neat four-point hesitation roll. After two Arguses and an Auster of the Avio Diepen concern had informed the crowd, by means of banners, that "*Shell Mex Motor Olie Tegen Corrosie*," there was another masterly aerobatic offering—by Gerben Sonderman, flying the silver, blue and yellow Fokker S.14. Sonderman, who is Prince Bernhard's personal pilot in addition to being Fokker's chief test-pilot, had rushed back from Helsinki to Schiphol to demonstrate the Derwent-powered two-seat trainer. Although his aircraft has only half the power of the Meteor, the Dutch pilot made it look almost as fast—without once leaving his line of demonstration in front of the enclosures. His choice of manœuvres, executed with masterly precision, included stall turns, aileron turns, a spin and a perfect eight-point roll. Within 45 minutes, Sonderman had returned to Schiphol, flown back again to Ypenburg in a Fokker S.11 trainer, and demonstrated it with equal skill and dash.

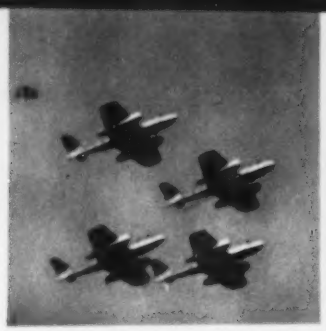


Leaving their characteristic and spectacular trails of sooty black smoke, four Canadian Sabres pull up in a steep climb over the N.A.T.O. flags.

It was in quality much more than quantity that Britain's prestige was upheld at Ypenburg, and for this fact much credit goes to the six Vampire pilots of No. 71 (Eagle) Squadron, B.A.F.O., who performed their aerobatics in a commendably original style. They flew in two sections: three had red fuselages, centre-sections and tailplanes, and the second flight had a similar scheme in blue. Blue section followed red through all manœuvres after a minute's interval, and the crowds appreciated the chance of seeing double every time the leading trio changed formation from vic to line abreast or astern. After several very tight circuits around the field, the formation joined in the centre for a "bomb-burst" break-away to six points of the compass.

George Thornton, who is a production test-pilot for de Havilland, put up an aerobatic show in a Chipmunk which, it must be admitted, was a good deal more exciting than the glimpses of a blue-painted R.A.F. Canberra which appeared immediately afterwards. Silver City Airways aroused great interest by sending a Freighter to the show with two new Hillman cars (the first to be exported to Holland by air) and two Hercules bicycles, which were unloaded before the tribunes. The new owners then drove their gleaming acquisitions round the field to the accompaniment of great flutterings of programmes and handkerchiefs. The Dutch

A glimpse of the tribunes from inside Silver City's Freighter as one of the exported cars is driven on to the airfield.



Truly international: British-designed, Dutch-built Meteor 8s of the Belgian Air Force.

Bombshell: the camera can only give a partial impression of this famous Skyblazers manoeuvre.

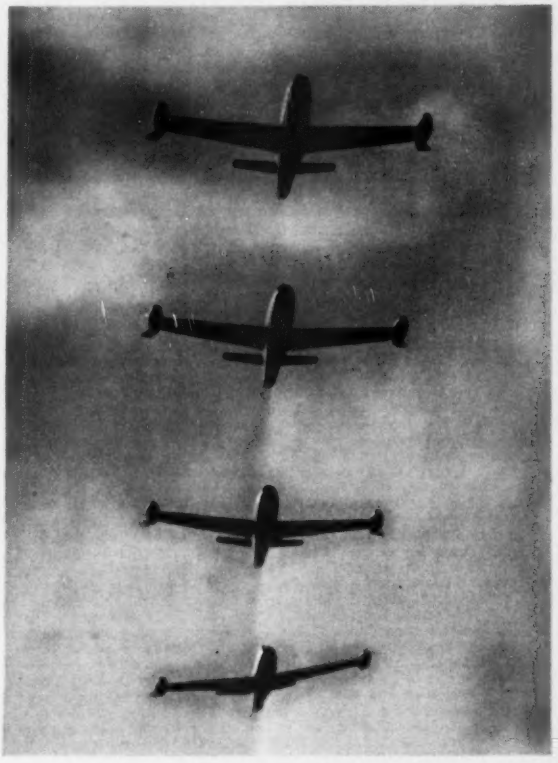
George Thornton, D.H. production test-pilot, flew the Chipmunk.

ILSY . . .

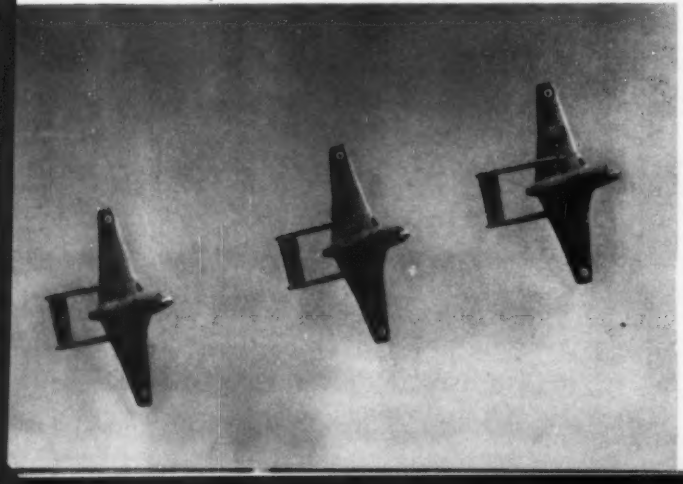
crowds are never slow to show their appreciation, and every ILSY item received its round of applause—even when the object of admiration was a Sabre pilot leaving the airfield behind at 11 miles a minute. Ranald Porteous demonstrated once more the amazingly agile Aiglet Trainer as only he can. His flick-rolls earned great respect, and Nottéghem was heard to observe: "This Porteous tells me he is only a pilot of small *tourisme*. I do not believe him." Parachuting was displayed by members of the First Netherlands Parachutists' Club (who use static lines and hire Dakotas for practice) and Maj. "Dumbo" Willans of the Irving company. Conditions were rather too gusty for jumping on the Sunday, but the 30 Dutch parachutists pressed on; and, mainly to "show the flag," we suspect, "Dumbo" did likewise. As a result, two of the Dutchmen were injured when they landed in the crowd, and although Willans appeared to descend safely after a ten-second delay, he sustained concussion on landing heavily on a dyke wall fringing the airfield. Happily, his injuries were superficial.

Twelve Sabres of the R.C.A.F. 12th Fighter Wing plaited smoke-trails at fantastic speed as they swept across the field after a 13th, devoid of wing-tanks, had well and truly punctured the barrier to announce their arrival with an almost deafening "b-b-bang." Four U.S.A.F. Sabres from an English base also demonstrated their speed and manœuvrability.

After the perfect contrast of silent and supremely graceful aerobatics and formation-flying by several types of sailplane, the programme was dramatically concluded with two of the most spectacular pieces of flying it has been possible to see at any European display—Prince Cantacuzene in his Bücker Jungmeister and the U.S.A.F. Skyblazers, flying F-84 Thunderjets. The Rumanian pilot, who methodically practises his repertoire before every display, won the applause of everyone present by his flick-rolls and inverted flying—performed at practically grass-level. Of the Skyblazers, much has been written—though, regrettably, their magnificent demonstration has not been seen in this country; of this, their final appearance in Europe, it can be said that the flying was perfect—as ever. The team have now completed 258 public performances, and the four pilots will shortly return to America for re-assignment. On both days of the display, the U.S.A.F. contributed another ILSY highlight—mass fly-pasts of 32 Thunderjets, 24 Invaders and (on the Sunday only) six B-50s. The Belgian Air Force was also represented, on the second day, by four aerobatic Meteor 8s and an individual Mk 4 Meteor, which was flown with great dash. Demonstrations of a more pacific nature were given by a Bell 47D mail-carrying helicopter of Sabena and by a K.L.M. Constellation.



Another glimpse of the Skyblazers, this time in line-astern.



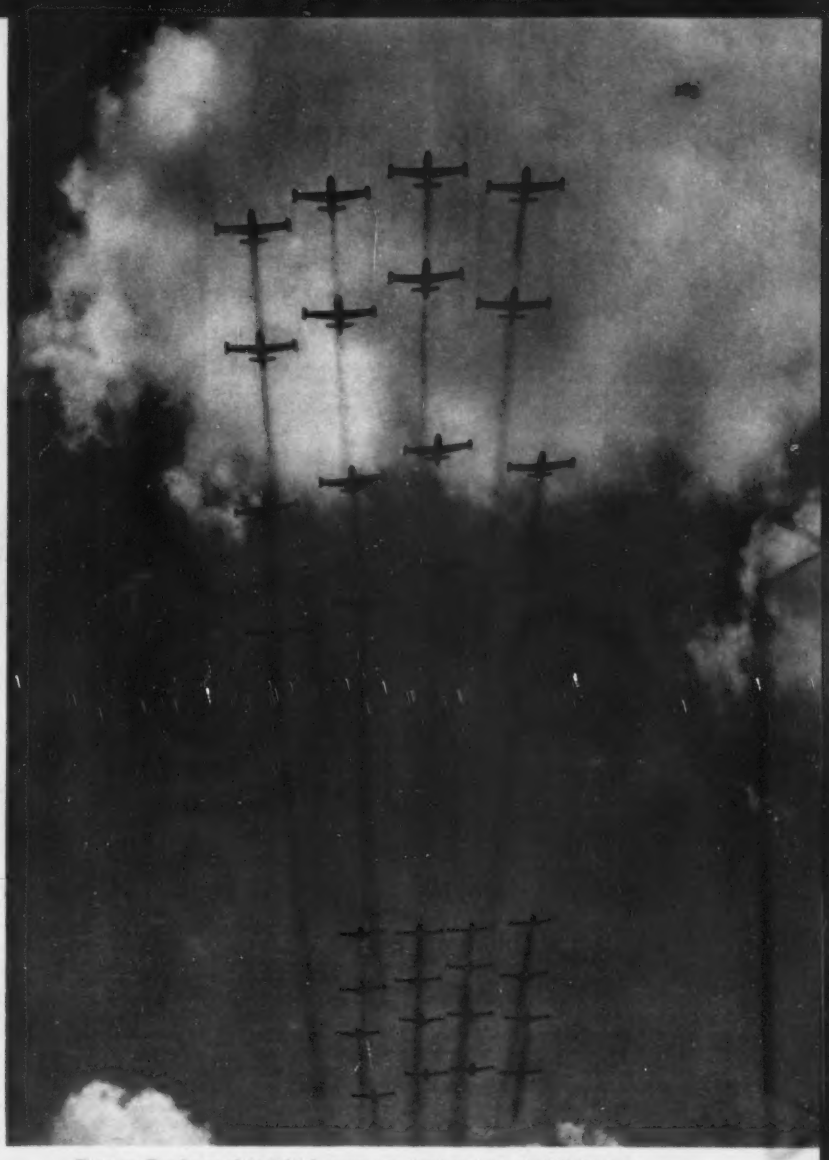
Pictured here in a tight turn are three of the six B.A.F.O. Vampires.

Auster's Ronald Porteous with parachutist Maj. "Dumbo" Willans.

Gerben Sonderman, who demonstrated both the Fokker S.14 and S.11.

Louis Nottégem in his Stampe.

Maj. Flinterman and Prince Cantacuzene.



Thirty-two Thunderjets of the U.S.A.F. stream over Ypenburg during the ILSY display.

Formation aerobatics by three Harvards of the Netherlands Government Civil Flying School, which operates from Ypenburg and Gilze-Rijen.

(Right) Nothing on the altimeter: Prince Cantacuzene's Jungmeister immediately after take-off. The Rumanian pilot's astounding performance is usually concluded by a flick roll just before touch-down.

OVER THE TOP

Another Project for a Polar Airline Route

LAST week we published an article on the possibilities of flying scheduled services between America and Scandinavia via the Arctic, and referring to the S.A.S. project. Now comes a report of a similar plan submitted for the necessary C.A.B. approval by an old-established air-transport operator in Alaska.

ONE of the most go-ahead among the aviation companies operating in Alaska, Wien Alaska Airlines, of Fairbanks, is reported to be preparing to organize a 6,000-mile scheduled North America-to-Scandinavia service across the polar regions.

Its managing director, Mr. Sig Wien, has for many years supported the idea of scheduled services between Alaska and Northern Scandinavia *via* the Polar Basin (that is, the ice-jammed waters contained by the arctic coastline of North America, Greenland, Siberia and Arctic European Russia) and today the company's plans for such a service are sufficiently advanced to have been laid before the Civil Aeronautics Board.

Wien Alaska approached Scandinavian Airlines last year with a view to reciprocation in the use of airfield facilities in Alaska and Scandinavia. The Scandinavians have rejected this proposal, no doubt on the grounds that they would prefer a completely free hand in the operation of a polar schedule. During a recent visit to Alaska, however, a special correspondent was told that Wiens are going ahead with their preparations to operate such a service.

Subject to C.A.B. approval of the plans (writes this correspondent) it will operate out of Fairbanks with DC-4s bearing the slogan *Arctic Route* on their noses; they will fly south of the 3,375-mile polar route blazed by Capt. Charles Blair in *Excalibur III*, (a rebuilt 1943 F-51C Mustang with a Packard-built Rolls-Royce Merlin engine and 865-gallon fuel tanks) in May 1951.

The company certainly has very considerable experience in arctic aviation. It was founded by Noel Wien in 1925 with a single Fokker F.III. The first pilot to fly to Point Barrow (then an Eskimo settlement on Alaska's arctic coastline and now a main U.S.A.F. and naval arctic research base), he founded a bush-pilot service second to none in Alaska or Arctic Canada. In 1938 Noel Wien sold out; relinquishing his chairmanship in favour of his brother Sig, he returned to bush flying, in which he is still engaged.

Today Wien Alaska Airlines operate a summer schedule of 16 flights per week between Fairbanks and Anchorage to Nome, carrying mail (for which they receive subsidy), passengers and freight.

Among the airstrip spectators watching a Wien Alaska Airlines DC-3 loading—an Eskimo woman with a child in her fur hood.

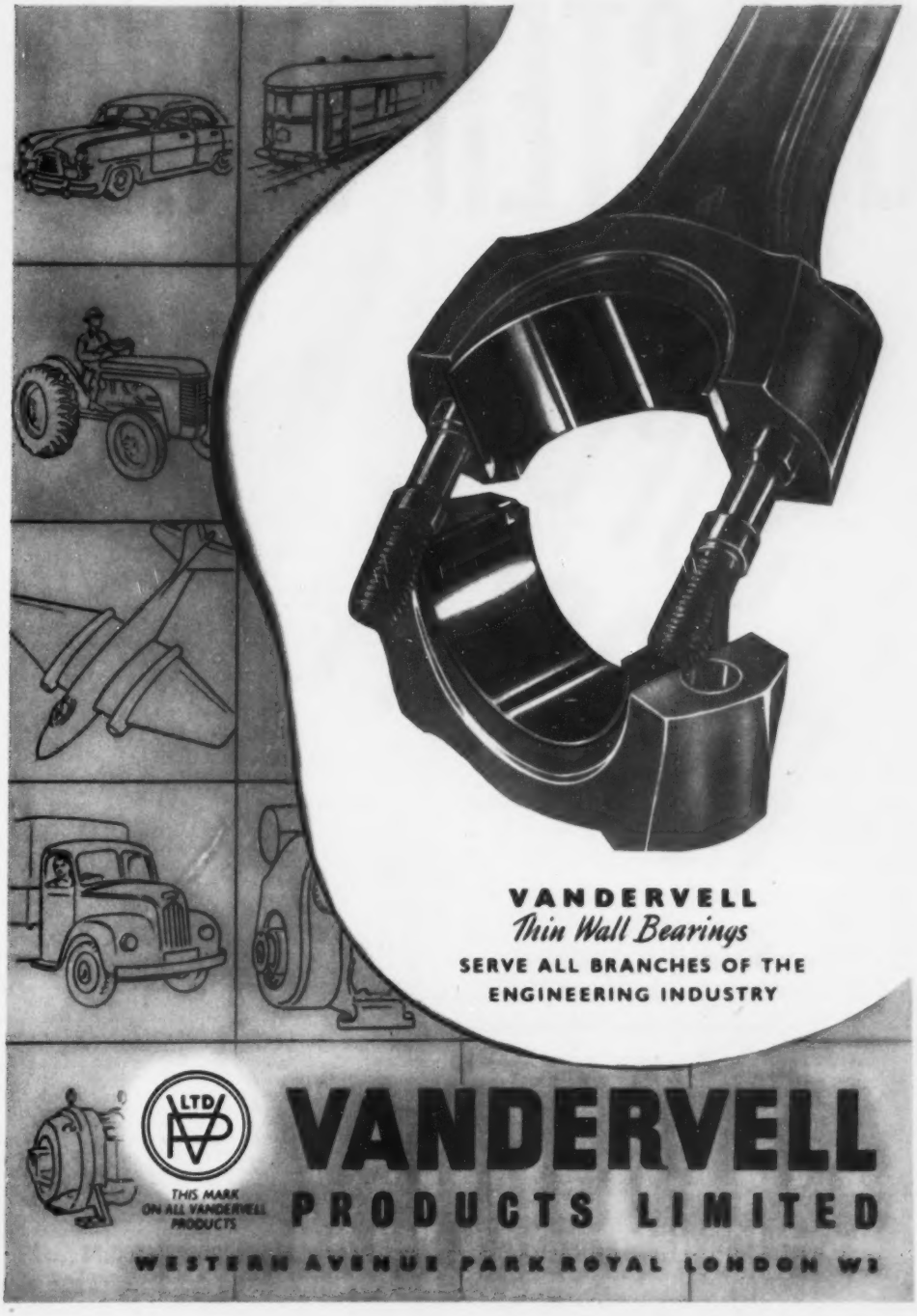
Air freight and mail are much the same thing in Alaska. The Eskimo half-breed manager of the airstrip at Kotzebue (the Eskimo settlement just north of the Bering Straits and opposite the Siberian coast) told the writer: "You're liable to have even washing machines air-mailed to you in this country."

The company has not forsaken true bush-flying business. In the past the bush pilot was invariably self-employed, an individualist who became a bush pilot because he wanted to fly where he wanted to and when he wanted to. His employment by an airline is a new development in bush flying. Wien's have four pilots operating out of Eskimo Kotzebue, flying Norsemen, Cansos, Cessnas, Beavers, Stinsons and Bellancas, wearing skis or wheels in winter and floats or wheels in summer, and operating either from the sea directly in front of the settlement or from a gravel airstrip some two miles behind the long row of huts that is Kotzebue. Four or five aircraft were in operation when the writer was there; he saw one of them, flown by a half-Eskimo pilot, put out of commission by a rough landing, and seven were frozen-in or drifted-over around the airfield.

The company's small aircraft serve as a link between Kotzebue and remote trapping settlements along the coast, and between Kotzebue and Nome when the weather at Nome

Loading a W.A.A. Cessna 170 bushplane on the sea-ice off Kotzebue.

Pilot and Eskimo "loader" of a Norseman operating from Kotzebue.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OVER THE TOP . . .

is too bad for the operation of DC-3s—a frequent occurrence, Nome weather being among the worst in the world, with recurrent fog, blizzard and icing conditions.

Wiens also operate a bush service to Point Barrow, from Fairbanks, and to the Eskimo settlement deep in mountain country about one hundred miles south of Point Barrow. It also serves a score or more of trapper settlements, meteorological and military stations which would take months to reach by dog team or canoe.

Perhaps only one company in the American North has as wide experience in arctic aviation as Wien Alaska, both in the matter of maintenance and the actual flying of scheduled services. This is Associated Airways, who operate from the Canadian gold-mining town of Yellowknife to the fur-trading and mining settlements of the N.W. Territories.

Wiens refuse information on the Arctic plan placed before the Civil Aviation Board, but it is stated to be ready to go into operation immediately C.A.B. gives approval.

Though C.A.B. approval of the polar-route project has not been given—or had not when this article was printed—a Wien DC-3 bears this anticipatory name. The proposal is to operate the route with DC-4s.

AFRICAN AIRLIFT

—to Move 15,000 Natives a Year to Rand Gold Mines

AS yet unknown to the general public, one of the most remarkable and significant developments in Southern African aviation is now being sponsored by the Transvaal Chamber of Mines through its Witwatersrand Native Labour Association, which has given a contract to a charter company, Africair, Ltd., to move 15,000 natives a a year by air over a portion of the long routes taken in their travel to and from the Rand gold mines. The basic value of the scheme is that it will effect a quicker turn-round of the labour supply.

The scheme has come into being because of the increasing shortage of native labour, which has forced the mining industry to recruit in territories far beyond the borders of the Union of South Africa.

For the operation of this air lift the charter company has established a completely self-contained base at Francistown, in Bechuanaland. Using three 28-seater Dakotas, it is making one return flight a day from Monday to Thursday between Francistown and Lilongwe, in Nyasaland, and one a day on Fridays and Saturdays between Francistown and Mohembo, in Northern Bechuanaland.

The air distance from Lilongwe to Francistown is 638 miles. The flight takes about four hours, as compared with a week previously spent on surface travel between the two points. From Mehembo to Francistown the W.N.L.A. operates a lorry service which takes upwards of five days. This distance of 430 miles is now covered by air in about two and a half hours. It is estimated that, spread over twelve months, about 10,000 Africans, who come mostly from Tanganyika and Portuguese Mozambique and make their way voluntarily to the W.N.L.A. depots in Nyasaland, will be flown between Lilongwe and Francistown. On the other branch of the airlift, from Mohembo, it is expected that about 5,000 yearly will make the flight. They are mainly Angolas, but will include a number of Northern Bechuanas. Between Francistown and Johannesburg the journey is made in both directions by rail.

The whole scheme is subsidised by the Chamber of Mines, so that the natives are flown at no cost to themselves, but the mining industry believes that it will be proved worthwhile in the saving of man hours. The initial flights were made at the end of June, but the scheme is still regarded as being in the experimental stage. If successful, and because of the probable necessity of the industry having to go even farther afield for its labour, the scope of the airlift is likely to be expanded.

In the present early stage of the operation the full benefit of the quicker transport of natives cannot accrue because of the delay caused by the yellow-fever immunisation period. The W.N.L.A., however, has made arrangements for repatriates who are to be flown back to be inoculated in Johannesburg before they leave. Under the recruitment system natives enter into contracts to work on the mines for a specified time, at the end of which period they like to return to their home territories for a fairly long stay. There is always uncertainty as to how long they will stay at home, but it is thought that, if they follow their normal practice, the gold-mines will lose appreciably fewer man hours in travel. Against this saving must be placed the cost of the air transport. Under the contract for work on the mines the Chamber of Mines has always paid the whole cost of bringing natives to the Rand, but the native pays for the return journey, this outlay being provided by advance deductions from his wages. With the inauguration of the airlift the repatriate will not have to pay for the flight from Francistown to Lilongwe or Mohembo. As yet no decision has been made about future financial policy in respect of the air trip, and no costs are so far known, but it is of interest that in a pilot scheme over a lesser distance carried out last year the operating cost worked out at 2d per mile per native.

During the pilot scheme, when natives were flown from Lilongwe to Lusaka in Northern Rhodesia, where they entrained, special attention was paid to their reaction to flying. It was found to be entirely favourable and there were only four known cases of air sickness.

In order to establish a base at Francistown, Africair, Ltd., had first to extend the runway from 1,650 yards to 2,700 yards, and the tiny strip in the bush at Mohembo had to be lengthened to 2,200 yards. The company had also to erect a hangar, install generating plant, organize fuel stocks, provide ground radio facilities, and build a mess for the unmarried members of its staff. Its three Dakotas were fitted with very simple seating and stripped of quite a lot of equipment. In the case of one aircraft the empty weight has been brought down to 16,286 lb. For major overhauls and inspections the Dakotas are flown to the company's base at Germiston. The resident staff at Francistown comprises three senior commanders, two second pilots and four engineers.

Africair, Ltd., is a subsidiary of the General Mining and Finance Corporation, Ltd., one of the oldest of the Rand's great mining houses. Its managing director is Mr. T. V. Mitchell, formerly of R.A.F. Transport Command and before the war an experimental and production test pilot for Handley Page. The African company came into being soon after the war, and for the first 18 months was mainly engaged in flying mining executives between South Africa and England. It has since provided a valuable means of quick transport from Johannesburg to distant manganese and other mining interests. In many cases it has had to build an airfield before it could operate, but these strips are now maintained by the mines concerned.

In addition to the airlift from the far northern territories, the Transvaal Chamber of Mines has sponsored a small lift between Mokhotlong, in Basutoland, and Ladysmith, Natal. Here again the natives have readily taken to the air, but the scheme is a small one, carrying about 50 passengers a month. E.N.T.

CORRESPONDENCE

The Editor of "Flight" does not hold himself responsible for the views expressed by correspondents in these columns; the names and addresses of the writers, not necessarily for publication, must in all cases accompany letters.

Good Vintages

WE think that you will be interested to know that the D.H.60 Moth G-EBLV, which you show on page 123 of the August 1st issue of *Flight*, was granted a C. of A. in May of this year.

This aeroplane, which first flew in 1925, belongs to the de Havilland Aircraft Co., Ltd., and was rebuilt at the London Aeroplane Club by members of the de Havilland Aeronautical Technical School under the guidance of the chief engineer, Mr. George Hart. Whilst it is true that most of the ply is new, it is of interest that some of the spars show the inspection mark and date 1924, testimony to the selection and protection of wood in those days.

Panshanger, Herts. C. A. PIKE.

BOTH the Hawker Cygnet and the D.H.60 illustrated in the article "Vintage Enthusiasm" have current Certificates of Airworthiness, that of the Cygnet being revived in May, 1950, after the aircraft had been in storage for some years.

It may be of interest to know that apart from the renewal of the fabric and the provision of new landing wheels, there was no other major work involved. This is a great tribute to the workmanship and materials of earlier years.

F. MURPHY,
Chief Production Test Pilot,
Dunsfold, Surrey. Hawker Aircraft, Ltd

Helicopter Survey

From Capt. G. A. Rotherham, D.S.O., O.B.E., R.N. (Ret.)

WHILE reading your edition of June 27th, I noticed a small paragraph concerning a Canadian project to prospect 100,000 square miles by helicopter.

You may be interested to learn that the helicopters for this operation are being supplied by my company, Kenting Aviation, Ltd. Prior to the operation, these helicopters were completely overhauled at our base at Oshawa in Ontario, and were then shipped on express car by train to Churchill, Manitoba, where they were reassembled and air-tested.

The operation was commenced before the break-up, using gas supplies put out by aircraft during the winter, immediate supplies being provided by a Norseman aircraft on skis. While the lakes were thawing an unfortunate accident occurred to the Norseman, which force-landed and, being on skis, sank through the soft ice into the shallow water. Now the helicopters had to turn into supply aircraft. They first of all rescued the crew and then flew in spare parts to allow the Norseman to be salvaged.

Since the break-up this operation has been proceeding smoothly, with the Norseman once more back on the job, and to date we have achieved some 300 flying hours, with hopes of many more before the operation is over.

The complete story will not be known for several months yet—when the parties return from the field, just before the freeze-up—but present reports show that the Government geological party are very satisfied with this type of exploration and we have great hopes that the party, which comes from the Department of Mines and Technical Surveys of the Canadian Government, will achieve results beyond their hopes. It has already been proved that this form of exploration is faster and cheaper than any other method.

Toronto. G. A. ROTHERHAM.

Unsound Barrier?

IT would appear that, once again, the film industry has produced what could well have been the film of the year, but which, through lack of attention to technical detail and more particularly to dates, has proved no better than those which went before; I refer, of course, to *The Sound Barrier*.

The acting generally, and the plot, leave nothing to be desired, but the producer seems very doubtful as to the order in which the events of his story took place. For example, we are given to understand that the film opened during the war (the young pilot's lack of knowledge of the principles of jet engines would lead us to believe the year to be around 1941-2, although in view of the mark of Spitfire seen flying in the first shot the date must surely have been 1944). However, whatever the year, it was most certainly war-time; what, then, was the Tiger Moth doing bearing a post-war civil registration and finished in a glossy silver? (The actual number was, I think, G-AHRM, but of this I am not certain.)

Perhaps the most obvious error—one which must certainly have been noticed by 90 per cent of the audience—occurs when, on landing at Hatfield after a flight from Cairo in one of B.O.A.C.'s latest Comets, G-ALYP (which, incidentally, changes from YS to YP whilst on the tarmac), we are confronted by a newspaper bearing the report of Geoffrey de Havilland's untimely death in the D.H.108.

However, the film further excels itself in showing what, at the beginning, is described as the Swift, whereas it is, of course, the Vickers-Armstrongs Supermarine 535, even to the point of bearing its registration VV-119. The 535 having eventually been written off, a further machine emerges from the factory—also bearing the number VV-119. Surely it is asking little that the film industry should endeavour to obviate these errors by either using another aircraft (in this case, of course, impossible) or painting on temporary letters or figures; or, alternatively, by obtaining shots which do not reveal the registration at all.

It therefore appears either that one must accept the aircraft as being genuine and disregard their dates of birth or else accept the period over which the producer intended his story to take place, and inevitably regard the machines as being purely fictitious. Whichever way, there is room for criticism. Surely if the industry can go so far as to have the co-operation of such firms as Vickers-Armstrongs and de Havilland, not to mention the advice of dozens of highly technical men, a film could be produced which would attain a higher degree of technical and chronological accuracy.

London, S.E.1. B. P. W.

Canada and British Technicians

WITHOUT wishing to prolong unduly the correspondence in recent issues of *Flight* on the subject of Canada's aircraft industry and British designers, I would like, if I may, to take up one important point raised by Mr. W. E. W. Petter in your issue dated August 1st.

In the penultimate paragraph of his letter in that issue he reaches what I believe to be fundamentally the core of the problem. The paragraph justifies its reproduction in full, I think :—

> "In the aircraft design-field the normal play of economic forces should rapidly correct the lot of any underpaid technicians in this country, and the converse is equally true : that a considerable influx of technicians into Canada, etc., will eventually create a surplus and result in a lower scale of remuneration."

These remarks can be reduced in essence to the dismaying axiom that a surplus of technicians can be used to reduce the remuneration allowed to them : a not impractical axiom by analogy with other departments of labour. The normal play of economic forces is perhaps not such an impersonal, automatic operation as one might think, considering that in this country, in spite of a shortage of technicians, remuneration for work on aircraft design is admittedly low.

I do not doubt, however, that such is the state of affairs, and it is regrettable that the rank and file of experienced technicians and engineers are seemingly helpless in face of the situation, short of the immediate opportunities for emigration.

The point I wish to make is that the capacity to pay good or poor salaries is seemingly independent of the shortage or otherwise of technicians and of what may be described as the marketable value of services rendered by them. It is freezing comfort to be thrown upon the mercies of the normal play of economic forces.

Hampshire. TECHNICIAN.

FORTHCOMING EVENTS

Aug. 15.	Aéro-Club de Charente Maritime: Laleu and La Rochelle Air Meeting.
Aug. 15.	Ailes Montluconnaises: Rally.
Aug. 16.	Aéro-Club de Vendée: Sables d'Olonne Rally.
Aug. 23.	Coventry Aeroplane Club: Air Day and Siddeley Challenge Trophy Race.
Aug. 23-24.	Aéro-Club de Trente: Dolomites Circuit.
Aug. 30.	Midland Aero Club: Display.
Aug. 31.	A.B.A.C.: Summer Convention.
Aug. 31.	S.M.A.E.: British Model Championships, College of Aeronautics, Cranfield.
Aug. 31-Sept. 7.	Scandinavian Air Rally.
Sept. 1-7.	S.B.A.C.: Flying Display and Exhibition, Farnborough.
Sept. 7.	"Yorkshire Evening News" Model Festival, Sherburn-in-Elmet
Sept. 14.	Milan Aero Club: Milan Grand Prix.
Sept. 15.	Battle of Britain Day.
Sept. 15.	I.A.T.A.: Eighth Annual General Meeting, Germany.
Sept. 17.	Golf: R.N. and W.R.N.S. v. R.A.F. and W.R.A.F., Camberley
Sept. 20.	R.A.F. At Home Day.
Sept. 21.	S.M.A.E.: Models Contests, Butlin's Holiday Camps.
Sept. 24-25.	Aerodrome Owners Association: Annual Conference, London.
Sept. 28.	Aéro-Club de France: Coupe Stemm Helicopter Competition.
Sept. 30.	Southern Aero Club: Rally, Shoreham

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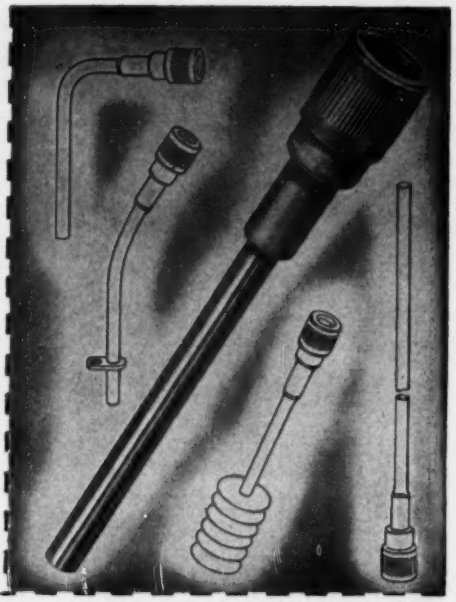

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ROTORS over the ATLANTIC

First crossing by a Helicopter: the story of the two Sikorsky H-19s

LAST week we briefly recorded the arrival in this country of the two U.S.A.F. H-19 helicopters (Sikorsky S.55, 600 h.p. Pratt and Whitney R-1340), the first rotorplanes to cross the Atlantic. It is now possible to tell the story of this historic flight in greater detail. The account which follows is by a member of the party which welcomed the crews at Prestwick, and it begins with an air-to-air impression of the arrival, for the writer, Colin Cooper, was on board a B.E.A. Viking (chartered by United Aircraft Corporation and by Westland Aircraft, the Sikorsky licencees in this country) which flew out to sea to meet the helicopters.

WHEN we arrived at Prestwick on Thursday, July 31st, the Viking's pilot, Capt. McKeown, learned that the two helicopters were within 200 miles of the coast, and it was decided that we should go out to welcome them. By the time preparations were made, it was necessary to fly only approximately 50 miles to their estimated location; on arrival, however, there was no sign of them and it was only on turning back that we spotted the escorting aircraft, and then the H-19s themselves.

Capt. McKeown closed right in on the helicopters, which were flying at approximately 500ft in close formation, and it was then that I had the satisfaction of doing one of those small things that many an airline passenger must have wished to try. We had permission to pull out the *sortie de secour* window-panels of the Viking for photographic purposes: it was surprising how little effort was required—I was most encouraged.

As the Viking circled the two helicopters, one could see that their crews were delighted at the friendly welcome. After formating two or three times with flaps down at about 100 m.p.h. our Viking gave a traditional aircraft salute; then we sped back to Prestwick to join the reception committee.

Shortly after 4 p.m. the helicopters came sweeping into the airport low over the hangars, their fuselages glistening in the evening sun. They flew past the waiting crowds in a splendid beat-up and then stall-turned into their landing approach. First down was *Hopalong*, flown by Capt. Vincent H. McGovern, the 29-year-old expedition commander, bomber pilot of War II and Korea veteran of 96 helicopter rescue missions. His co-pilot was Capt. Harry C. Jeffers, also a Korea veteran. The second machine, *Whirlaway*, was captained by 1st Lt. Harold W. Moore, who has 112 Korean missions to his credit; its co-pilot was Capt. George D. Hambrick, who had been so keen to be included in the expedition that he offered to take orders from his junior officer.

After the crews had been subjected to the usual broadside of press and newsreel cameras, General Griswold, Commanding General of the 3rd Air Force in Great Britain, welcomed the crews on behalf of the U.S.A.F. Also there to greet them were Mr. L. D. Lyman, vice-president of United Aircraft, Mr. Muir of the same organization, and Mr. Martin Graham of their Pratt and Whitney division.

The British welcome was extended by Mr. J. Fearn, director of Westland Aircraft, Ltd.—who are building these Sikorsky S.55s as well as the smaller S.51s in this country—and Mr. A. H. Williams, the company's commercial manager. The writer was privileged to welcome the four pilots on behalf of the Helicopter Association of Great Britain, and they received a letter and telegram of congratulations from the Association's president, Mr. Eric Mensforth.

Although they had been flying for over ten hours, the four crew-members did not appear unduly tired, as, with Maj. Richard B. McVay, they told the story of their trip. As project officer, Maj. McVay had accompanied the helicopters in the C.47, one of the two aircraft that escorted the expedition across. The other was a Grumman Albatross amphibian. The day-by-day story of the flight was as follows:

July 14th.—A farewell party was given in the officers' mess at Westover Air Force Base, near Springfield, Mass. Mr. Igor Sikorsky, pioneer designer of the Sikorsky range of helicopters, and Mr. Ben Whelan, general manager of Sikorsky aircraft, were

The two H-19s touch down at Prestwick, under fire from an assorted battery of cameras. In the heading picture they are seen approaching the Ayrshire coast, near Prestwick.

Not all the route-maps were carried in the cockpits. It was just as well that landfall was not to be made at the U.S.A.F. base at Manston, Kent. . . .

ROTORS OVER THE ATLANTIC . . .

amongst the well-wishers who gathered at Westover A.F.B.

July 15th.—The two helicopters took off from Westover on the first 380-mile leg, to Presque Isle, Maine. Each had three extra 100 U.S. gallon fuel tanks in the cargo hold, giving a total capacity of 480 gal. The machines took off at a gross weight of 8,125 lb, an authorized overload of 625 lb. A short running take-off was made to avoid any risk of sink between a hovering take-off and transition to forward flight. The trip to Presque Isle was uneventful.

July 16th.—Delay due to bad weather.

July 17th.—The 570-mile flight to Goose Bay, Labrador, was completed uneventfully.

July 18th-19th.—Bad weather over Greenland precluded the escort aircraft from attempting the 770-mile crossing.

July 20th.—A first and unsuccessful attempt was made at the long crossing, but the helicopters met headwinds when half way and were forced to return to Goose Bay. On the second attempt they were called back after 1½ hours' flying, because the weather had again closed down over Greenland and would have prevented the escort aircraft from landing there. On the third try the helicopters struck extremely bad weather, with poor visibility and rain-storms, when only 1 hr 20 min out from the Labrador coast. They were therefore ordered to return. On the way back, headwinds of up to 50 kt were encountered and at times the H-19s had a "sea speed" of only 25 kt. After 4 hr 40 min flying it was deemed impracticable to complete the return journey to Goose Bay against such head-winds and the helicopters therefore landed at an Army Camp at Cape Harrison (on the Labrador coast) for the night, returning to Goose Bay next day for refuelling. There was now a weather hold-up of nearly a week.

July 27th.—On the fifth attempt, which was to prove successful, the helicopters and their two escorting aircraft had passed the point of no return when the American weather bases at Bluie West One and Bluie West Two in Greenland announced a complete close-down : the ceiling at B.W.1, the destination, was 50ft, with visibility of a little over 100 yards. The expedition was obliged to continue, however, and on arrival near Greenland the helicopters were forced down to 30ft, and a careful lookout had to be kept for icebergs and small islands. Eventually the helicopters were forced to land on a tiny island 42 miles short of their destination, where they stayed the night of Sunday, July 27th.

July 28th.—The aircraft flew on to Bluie West One.

July 29th.—The helicopters were rejoined by their escort aircraft, which had been forced to land elsewhere, and after take-off they all flew south around Cape Farewell, the southernmost point of Greenland. With a 35 kt tail-wind they arrived at Keflavik, Iceland (850 miles), after 9 hr 50 min, two hours ahead of their E.T.A. In Iceland the expedition was welcomed and entertained by Westland Aircraft agents Mr. Gisli Johnson and Mr. Paulsen.

July 30th.—Again the likelihood of head-winds precluded a start on the last 920-mile hop to Prestwick *via* the Hebrides.

Thursday, July 31st.—The weather report being favourable, the helicopters made a 6 a.m. B.S.T. take-off. All went well, and after their longest flight (947 miles)* of 10 hr 10 min the two aircraft completed the first helicopter crossing of the Atlantic when they landed at Prestwick at 4.10 p.m. B.S.T. The total flying time was 42 hr 25 min for the complete trip of some 4,000 miles from their base in Massachusetts. On arrival the pilots stated that they still had three hours' fuel remaining. Cruising speeds of 80 to 85 m.p.h. had been maintained, at altitudes varying between 50 and 3,500ft, as dictated by weather; usually the height was around 500ft.

It is interesting to note that jet fighters waiting at Goose Bay to be ferried across the Atlantic at the time of the departure of the helicopters were still waiting for suitable weather when the latter had completed their crossing.

The flight was a most ambitious and courageous undertaking, and its success reflects credit on the Bridgeport team of designers and engineers responsible for Sikorsky helicopters. It is an appropriate addition to the long list of "firsts" that Igor Sikorsky's many helicopters have counted to their credit. It will be remembered that Igor Sikorsky was responsible for the design of the V.S.300, the world's first practical helicopter.

The first commercial licence for a helicopter was for a Sikorsky machine and many of these machines have since set up world records for speed, distance and altitude. It is fitting that it was two of Sikorsky's latest production machines that brought home the helicopter Blue Riband of the Atlantic to their pioneer designer.

The two S.55s, or H-19s, which made the Atlantic crossing continued next day (Friday) to the Continent, on their way to join the 9th Air Rescue Squadron at Wiesbaden, Germany; on the Saturday (August 2nd) they appeared at the Ypenburg Display in Holland, an account of which appears on pages 181-183. For operational duty the extra fuel tanks will, of course, be taken out and rescue winches re-installed. It is understood that the crews will shortly return to the United States.

Apart from its historical significance, the Atlantic flight has proved that it is possible to deliver rotorplanes from America to Europe by this method. Whether in peace-time it would be economically practicable has yet to be evaluated, for it is obvious that the elaborate escort arrangements used on this occasion could not be repeated for every delivery. Apart from their search and rescue responsibilities, the escorts acted as navigators : they gave the helicopter pilots their position every 15 minutes, and one, flying ahead, sent out a continuous signal. C.C.C.

* *Subject to official confirmation, this will break the long-standing helicopter straight-line distance record of 1,132.337 km (704.5 miles), established in May, 1946, by Maj. F. T. Cashman, who flew a Sikorsky R.5A from Wright Field, Dayton, Ohio, to Logan Field, Boston, Mass.*

One of the H-19 crews, Capt. McGovern (right) and Capt. Jeffers, meet Gen. Norstad, Commanding General, U.S. Air Forces in Europe, at the Ypenburg display. Portraits of the other crew-members appeared last week.

"Flight" photograph

Extra tankage in the holds of the helicopters brought the fuel capacity up from 180 U.S. gallons to 480. An overload take-off weight of 8,125 lb was permitted for the purposes of this particular flight.

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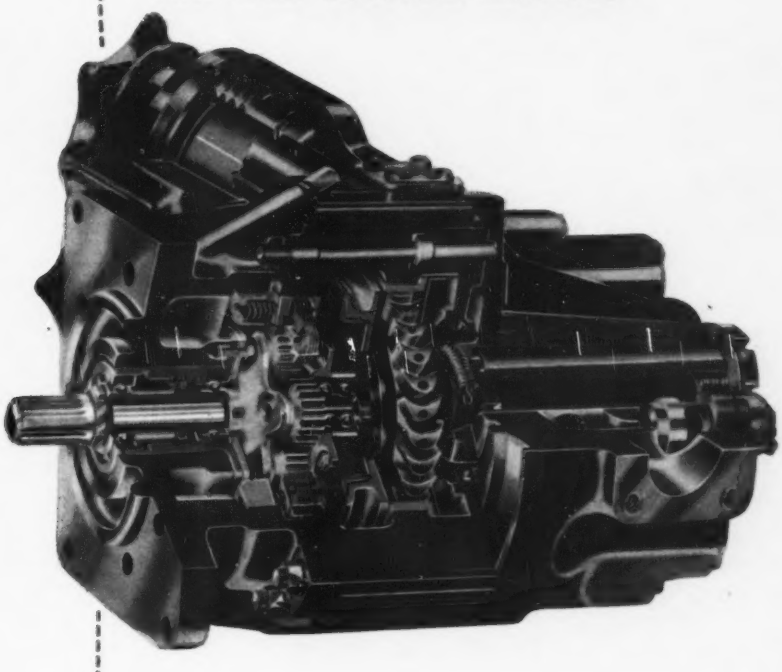

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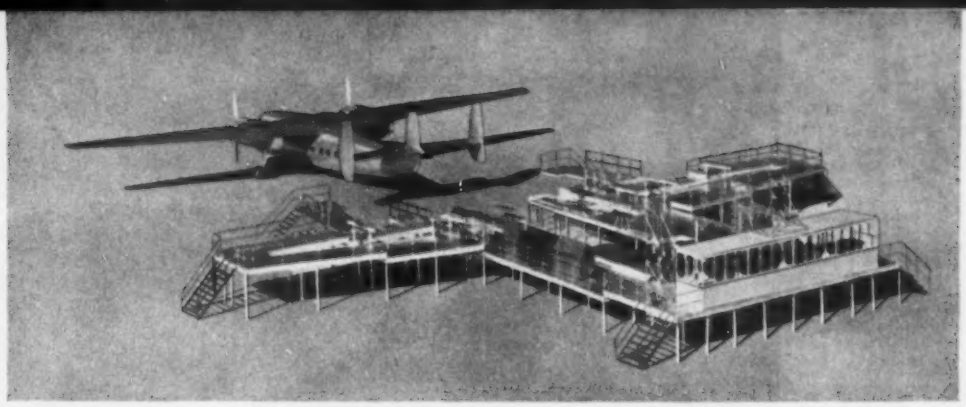


PRE-FAB AIRCRAFT DOCKS

—*to Facilitate Maintenance: An Adaptable Sytem of Staging*

THE rate at which modern civil transports can earn revenue is so high, and is increasing so rapidly, that the time such aircraft spend on the ground must be reduced in proportion if lost revenue is not to become excessive. This is generally recognized, and service turn-around times are usually of a commendably brief order; but the biggest waster of potential earning-time is without doubt the need to put every transport "in dock" at specified intervals—sometimes with distressing frequency and for inordinately long periods.

The number of man-hours required for major overhauls, or the "Check IV" overhauls made by the Corporations, or running Cs. of A, will probably always extend to hundreds; but there is no doubt that, by careful time-and-motion study and attention to detail, much more brisk schedules than those now in force will eventually be obtained without the servicing itself being in any way hurried.

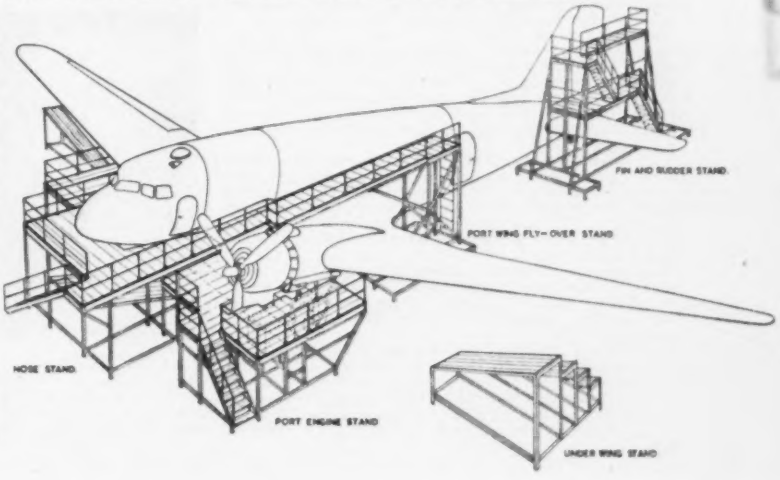
As a step along this profitable road, many operators are using aircraft "docks" which embrace all necessary facilities for servicing, including static and/or movable platforms; air, electric and hydraulic circuits; lighting; fire-fighting appliances; check-sheet boards; offices; and lockers for clothing and tools. Such docks must be light and robust structures and must be capable of providing adequate working space (both above and below the platforms, if possible) with non-skid flooring at heights suited to the type of aircraft which the staging will be required to accommodate.

The first essential requirement for an efficient dock is a basic structure to which all other equipment is complementary. Tiltman Langley Laboratories (Redhill Aerodrome, Surrey) believe they have found, in the "Keylock" system of assembly, a means for pre-fabricating the dock structure to permit easy breakdown into small components for rapid transport and, if required, re-erection in a completely different form to suit the needs of a new aircraft-type. Alternatively, a more elaborate, fixed structure can easily be built for major overhauls, to which additions or alterations can be made at any desired time.

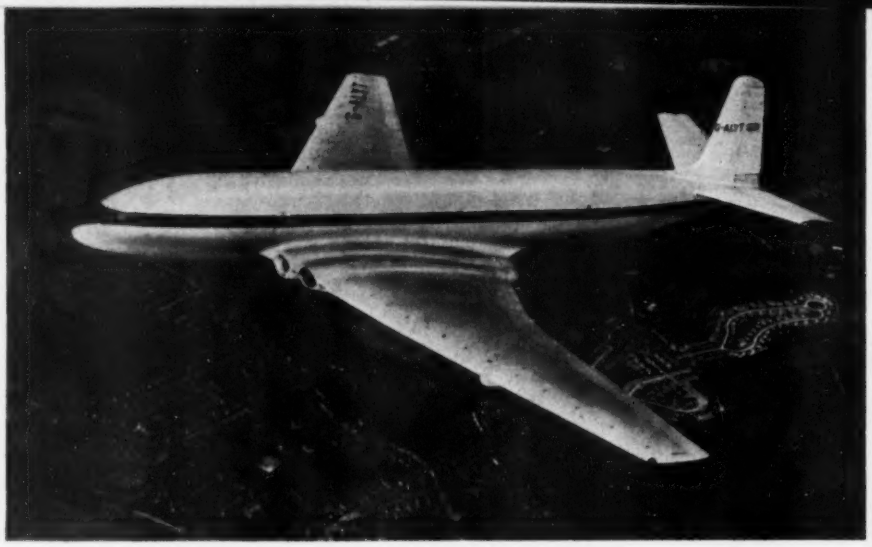
The system utilizes extruded light-alloy channel-section members with one-inch sides in which are punched keyholes. Into these holes are fitted precision die-cast aluminium-alloy keys and locking elements which are then held rigidly in place by inserting a taper pin through a hole. By this means, complex assemblies can be built quite rapidly, using no tool other than a hammer. Dismantling is equally straightforward, the taper pins being driven out and so freeing the locking elements for removal with a screwdriver.

Tiltman Langley docks using this Keylock system have been designed for two types of aircraft. One, for Pionair DC-3s, is being constructed for use at the B.E.A. base at Renfrew, and is scheduled to be in use at the end of this month. A model of this dock will form the centre-piece at the Tiltman Langley stand at the S.B.A.C. show at Farnborough next month. The Pionair dock is made up entirely of mobile stands so that, once the aircraft has been positioned in the hangar, these sub-assemblies can quickly be moved into place around it, as shown in the drawing below.

The other Keylock-type dock has been developed as a fixed structure for Check IV work on the Ambassador; the working platforms here surround the aircraft completely, except for two movable sections around the nose. In both types of dock, as is apparent from the illustrations, absence of any obstructing members beneath the platforms facilitates easy access to the underside of the aircraft.



The Ambassador dock (top of page) is a fixed structure embodying offices (seen on the rear staging) and—looking like small huts—check-sheet boards and stowage lockers. The Pionair dock (right) is completely mobile.



IN THE NEWS: Two new orders for Series II de Havilland Comets have recently been placed—by Japan Air Lines and, as reported below, the Venezuelan company L.A.V. Pictured here is the Avon-powered Series II prototype which has completed some 150 hours' test-flying; modified air-intakes may be seen in future pictures of the same machine.

"Flight" photograph

CIVIL AVIATION

COMETS IN THE NEWS

THE second scheduled service to be operated by a jet airliner was inaugurated by B.O.A.C. on Monday at 1037 hr, when a Comet took off for Ceylon, arriving at Colombo at 0757 B.S.T. next day. Scheduled flying time for this 5,940-mile journey is 16 hr 35 min, compared with 29 hr 35 min taken by piston-engined Argonauts. The new Comet service is to be operated once weekly in each direction through Rome, Beirut, Bahrein and Karachi, and the total elapsed time on the route is scheduled at 21 hr 35 min.

Interviewed by Charles Gardner for the B.B.C. on the occasion of the departure of the Ceylon service, Sir Miles Thomas, chairman of B.O.A.C., made some most informative statements regarding the future equipment and operations of the Corporation.

By 1954, he said, the Avon-powered Comet II should be in transatlantic service; and during the intervening period these aircraft would make many meteorological flights at 40,000ft along the route. By 1957 the Comet III would be in service; this "Super Comet" would be bigger, faster, and have much increased range compared with the earlier series, and would be operated as an "over-50-seater."

Parallel with the fast, high-altitude Comet services there would be tourist services with the Britannia—the first of which aircraft, said Sir Miles, was likely to fly during this week. Operated as 100-seaters, cruising at up to 400 m.p.h. for 6,000 miles, Britannias would carry passengers at reduced fares; the routes would include a London-Tokyo schedule *via* the North Pole, and—it was hoped—a London-Edmonton (Alberta) service flown non-stop.

Tentative plans for inaugurating a Comet service were announced by Canadian Pacific Airlines and Japan Air Lines last week. The Canadian company hopes to put Comets on the Honolulu-Australia leg of its Vancouver-Australia route early next year; 1955 is the date given for the inauguration of a weekly Avon-Comet service by the Japanese operator between Tokio and London via Hongkong, Bangkok, Calcutta, Bombay, Karachi, Cairo and Rome.

It is reported that two Series II Comets have been ordered by the Venezuela operators, Linea Aeropostal Venezolana, for a direct express non-stop service between Caracas and New York, a distance of 1,240 statute miles. Delivery is expected to take place in mid-1955. The manufacturers announce that 49 Comets have now been ordered or are the subjects of contracts in advanced stages of negotiation.

Linea Aeropostal Venezolana at present operates a thrice-weekly non-stop Caracas-New York service and a thrice-weekly service between these points *via* Havana. Constellations are used on these routes as well as on the twice-weekly service between Caracas and Lima.

At December 31st last L.A.V. operated a fleet consisting of four Constellations, twenty DC-3s, two Martin 2-0-2s and two Commandos. In 1951, the company flew 7,243,000 revenue kilometers on domestic services and 2,706,000 on international flight. The total number of revenue passengers carried was 186,576, of whom 22,715 were transported on the company's international routes.

GATWICK DEVELOPMENT

AS recorded briefly in *Flight* last week, the Ministry of Civil Aviation has announced its intention of developing Gatwick Airport as a southern alternative to London. The present main runway, 1,400 yards in length and constructed of P.S.P., will have to be improved and extended—on the western side of the airfield, according to current reports. Such an extension would involve diversion of the main London-Brighton road; on the eastern side Gatwick is well served by the London-Brighton electric railway line. The airport, 27 miles from London, already has its own station. There is also another station at Gatwick Racecourse, which lies to the north and is nearer the site of the proposed new terminal buildings.

NEW LINK WITH BERLIN?

ACCORDING to a report from Berlin, the city government has been negotiating with several companies over the possibility of opening a high-frequency passenger service between the capital and Western Germany. A contract to operate the services would probably involve a subsidy, since the Berlin-Hanover return fare proposed by the city government is quoted only as £4. Silver City Airways, whose Bristol Freighters would probably be well suited to short-haul, high-density operations of this type, are reported to be one of the companies involved in the negotiations.

T.C.A. PERSONALITIES above are Capt. Bert Trerice (left) and Mr. H. Horne, who have both received new appointments. Capt. Trerice, who has flown 3m miles with the airline since 1939, becomes check pilot on internal services; the new post of chief flight engineer goes to Mr. Horne, who will be responsible for training T.C.A. engineers for the new Super Constellations ordered by the company.

MILLIONAIRLINE

FEW airline operators will quarrel with the opening statement of the annual report of K.L.M. Royal Dutch Airlines: "In the year 1951 aviation made considerable progress. . . ." The remark is certainly borne out by K.L.M.'s balance sheet for the year, which shows that the company's revenue rose to some £23m from the previous year's figure of £19m. After making allowances for depreciation of aircraft and other fixed assets, and deduction of profits tax, the company's operations showed a surplus of approximately £1m.

The principal operating statistics for the company in 1951 were as follows (percentage increases over the previous year are shown in brackets): Revenue ton/km, 153m (24); load factor, 67.9 per cent (2.9 per cent); cost in Dutch cents per ton/km available, 99 (−5); revenue in Dutch cents per ton/km available, 104 (1). The company did not increase the size of its fleet in 1951, so that the greater output was thus achieved by higher annual utilization. Costs did not increase to the same extent as revenue, and although wages in the Netherlands went up by 5 per cent in March 1951, these increases were offset by economies secured by greater efficiency. During the year K.L.M. placed orders for six Convair 340s (which will replace some of the 240s used on the European routes, thereby releasing them for service in the West Indies) and a Douglas DC-6A long-range freighter.

Orders had already been placed in 1950 for seven DC-6Bs and nine Model 1049 Super Constellations, this order being subsequently increased to thirteen. In size, K.L.M. ranks fourth among the world's airlines, and at the end of the year under review its fleet consisted of twenty DC-3s, ten DC-4s, seven DC-6s, sixteen L-749 Constellations and twelve Convair 240s. The report concludes that prospects for 1952 are favourable, although it is expected that higher prices and higher wages will affect operating results. K.L.M. is confident of a large turnover, although it admits that signs of a slight economic recession can be observed here and there.

CHARTER NOTES

IN the seven days ending August 10th, 1952, British independent air transport operators were due to complete approximately 110 charter flights, quite apart from normal trooping business. For most companies the week was a good one and over 75,000 miles of *en route* flying were scheduled. The work was roughly divided into 42,000 miles of passenger flying and 33,000 miles of freight flying; the freight mileage was made up of 12,000 miles of cargo transport between Berlin and Hamburg, 10,000 miles of carrying ships' spares, 5,000 miles of horse flights, and some 6,000 miles of miscellaneous freighting. It is estimated that charter trips by British aircraft accounted for the movement of 1,100 passengers and 400 tons of freight.

Skyways of London, Silver City and Air Charter (Aviation Traders) flew approximately equal mileages and B.K.S. Aero Charter came very close behind them. With the exception of one Tudor flight, all reported business was carried out by Yorks, Bristol 170s and Dakotas. Skyways' Yorks completed 22 stage lengths between Southern England and Helsinki; in addition to bringing home the British, Canadian and United States equestrian teams, the company transported between 350 and 400 Olympic competitors and their equipment between Great Britain and the Finnish capital. Another York operator, Eagle Aviation, flew 45 members of the Turkish Olympic Team from Helsinki to Istanbul. This company's aircraft also flew 46 students from Copenhagen to Paris and returned to the Danish capital with a similar load.

The B.K.S. Dakotas made six flights between this country and Basle, each with 32 passengers, mainly students. They also flew a Dakota-load of ship's spares from Amsterdam to Lisbon and sent another Dakota from Paris to Kuwait with a cargo of explosives for the Kuwait Oil Company; this aircraft flew on to Karachi and brought back a load of ship's spares to Oslo. Scottish Aviation brought the number of ship's spares flights to four by flying 4,800 lb of equipment from Copenhagen to Cairo.

Under sub-contract from Crewsair, Air Charter flew 27 passengers to Lusaka in one of their Dakotas. They also flew 72 passengers to Johannesburg in a Tudor for Tropic Airways. Tropic also chartered a Silver City Bristol 170 to take 32 passengers from Malta to Johannesburg. Other flights by the latter company's Bristol 170s included three trips from Sylt to Renfrew, each with 32 passengers, and one flight with 38 passengers from Renfrew to Aldergrove; these flights were for the Air Ministry. Forty-two Boy Scouts, camping in France for a week, were flown to and from Le Touquet. Twenty-four animals were flown by Silver City during the week; these comprised four horses of the Egyptian Olympic equestrian team, which were brought back from Helsinki to Paris, four race-horses flown from Blackbushe to Le Bourget, and 16 polo ponies flown from Lympne to Deauville. Two loads of cheese were flown from Le Touquet to Lympne.

Air Charter and Silver City, continuing their cargo flights between Tempelhof and Hamburg, completed 54 round trips. Scottish Airlines and Hunting Air Transport aircraft on "summer rush" charter to Aer Lingus also completed a large number of trips, but details were not available and have not been included in the foregoing estimates; it is known, however, that Scottish made five trips to Dublin.

B.C.P.A. MODIFY DC-6s

BY fitting paddle-bladed Hamilton Standard airscrews on their Douglas DC-6 transports, British Commonwealth Pacific Airlines expect to raise the take-off weight of these aircraft from 93,200 lb to 95,200 lb, of which an extra 1,200 lb will be available for mail or cargo. At the same time rear cargo compartments on their DC-6s are being enlarged to allow for extra capacity. The new airscrews are of the reversible-pitch type.

RECORD BANK HOLIDAY TRAFFIC

MORE than 15,500 passengers were flown out of London on B.E.A. services during the week ending on August Bank Holiday. This breaks the Corporation's 1951 record of 13,000 in any one week and tops the previous week's 1953 record of 15,224, during which Kensington Air Station handled 7,213 passengers in one day. Altogether there were 108 flights to Paris, 43 to Nice, 92 to Jersey, and 31 to Guernsey. Extra flights were also made to Scotland, Northern Ireland, Belgium, Germany, and Malta.

Aer Lingus reports that between August 1st and August 4th

ON SCHIPHOL APRON are examples of the main aircraft-types operated by K.L.M. Royal Dutch Airlines, which, as recorded this week, made a profit of £1m in 1951. On the left are one of the company's new DC-6Bs and a DC-6 (the "intruder" is a Scandinavian DC-4); L-749 Constellation and Convair 240 bring up the rear.

CIVIL AVIATION . . .

inclusive, its 13 routes carried 9,000 passengers. This figure exceeds the total number of passengers carried by the company in the first three years of its existence—from 1936 to 1939, when the total was 7,600. On the London route alone 2,930 people were carried—848 on "Starflights"; 3,100 passengers used the company's provincial routes, while just 2,000 travelled to and from Glasgow and Edinburgh.

The grand total shows an increase of 37 per cent over the last August Bank Holiday figure, which itself was a record. Saturday, August 2nd, was the busiest day in the history of Aer Lingus; 2,741 passengers were carried—four and a half times the total number carried in the first year of operation.

B.O.A.C. AIRCREW EXPERIENCE

ONE-THIRD of B.O.A.C.'s operational aircrews—pilots, navigators, radio and engineer officers—have now flown more than 1,000,000 miles each.

The joint total reached by these 458 aircrew members is well over 500 million miles. Of the 296 captains flying with B.O.A.C., 234 are now "mileage millionaires"; among them are 11 who have made more than 300 crossings of the North Atlantic and 11 others who have made more than 200 crossings.

U.K. AIRPORTS IN JUNE

MOVEMENTS at U.K. airports during June, 1952, totalled 20,368—2.2 per cent less than in June, 1951. The number of passengers handled, 314,162, represented an increase of 10.3 per cent, but freight loadings and unloadings went down by 15.2 per cent—the total for the month being 3,912 short tons. Airports at which passenger traffic increased (percentage increases in brackets) during June include: London (4.4), Northolt (2.1), Ronaldsway (17.4), Prestwick (37.7), Ringway (35.5), Renfrew (6.7), Belfast (4.5), Jersey (43.8), and Guernsey (39.3).

TURKISH CHARTER COMPANY

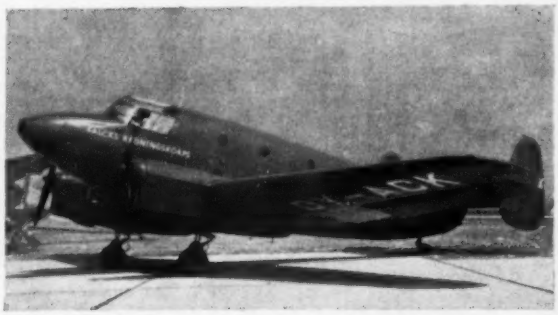
ONLY recently has permission been granted for private companies in Turkey to own and operate aircraft. It is now learned from Field Aircraft Services, Ltd., that a new independent Turkish operator called Gok-Tur, meaning sky tourism, has ordered from them the initial equipment of a charter fleet. The directors of the company are Mehmet Altonbey, a former pilot of Turkish State Airlines who has served some time in the Russian Air Force (and has written a book on the subject); Suha Dagdeviren, a pilot; Benik Odoglo, a merchant; and Faruk Fenik, a prominent Turkish journalist.

A Consul and two new Proctor Vs (the former registrations G-AJLM, G-AMTJ and G-AMTI) have been supplied, to date, by W. S. Shackleton, Ltd., in conjunction with Field Aircraft Services, Ltd. The Consul was flown by Shackleton's test pilot, Miss R. M. Sharp, M.B.E., and the Proctors were ferried by Miss D. Hutchinson-Smith and Mr. M. Altunbay; their route was Croydon, Lyons, Nice, Rome, Brindisi, Athens and Istanbul.

RADIO REGULATIONS

REFERENCE is made to general and restricted-class flight R/T. operators' licences in *M.C.A. Information Circular No.* 69/1952, which says that licences granted by the Postmaster-General in respect of aircraft radio-stations are being amended. Concerning present regulations, the circular points out that persons undergoing training in flight-crew duties, including members of flying or gliding clubs under instruction (but no others) need not possess a flight R/T. licence in order to operate radio in aircraft for the purpose of sending spoken messages.

Under the heading "Conditions" it is stated that the radio transmitter shall only be used for sending spoken messages for instructional purposes or in connection with the safety or navigation of the aircraft, and that the transmitter shall be pre-set on one or more of the frequencies assigned for the purpose.



TURKISH EXPORT: Powered by two 135 h.p. D.H. Gipsy Majors, the 124 m.p.h. T.H.K.5 light ambulance is a product of the Turkish Air League factory at Ankara. The example shown was bought by a Danish air ambulance service and is seen on arrival at Kastrup. Nine examples of the passenger-carrying T.H.K.5A on Turkish domestic services.

BREVITIES

AIRLINES using London Airport are reported to have protested that the reception buildings are not large enough to handle the increasing number of passengers. An M.C.A. official is quoted as saying that the Ministry realized the inadequacy of the present reception buildings and had submitted plans for extending them. These plans, however, had been turned down "because the Minister has decided to concentrate on getting the central buildings ready as soon as possible."

* * *

As reported recently in *Flight*, Civil Air Transport, Inc., have taken full possession of 40 airliners at Kai Tak, Hongkong, following their successful appeal against a decision by the Supreme Court of Hongkong awarding the ownership of the aircraft to the Chinese Government. The Peking Foreign Minister has protested that the Hongkong Government had absolutely no right to transfer the aircraft and that this action was "the most serious expression of hostility shown by the British to the Chinese Government."

* * *

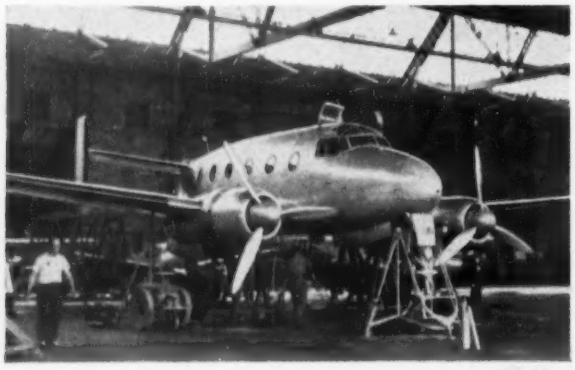
During the first five months of 1952, Pan American World Airways flew 14 per cent more passenger-miles and 15 per cent more cargo ton-miles than in the corresponding period last year. Their transatlantic services during June showed a 35 per cent increase, compared with passenger-miles flown in June 1951. Trans World Airlines also report excellent results on the North Atlantic as a direct result of the introduction of cut-rate fares; their eastbound transatlantic traffic during May and June was 30 per cent higher than in the same period last year.

* * *

Seaboard and Western Airlines' fleet of DC-4s achieved an average daily utilization of 13.6 hr during June. On military and commercial operations over the Pacific during the month, the company logged 3,073 hours and flew 602,248 revenue miles—an eight per cent increase over activities in June, 1951.

* * *

T.W.A.'s tourist flights carried 209,000 passengers in the first seven months of 1952—nearly 30,000 more than in the whole of last year. Of the January-July, 1952, total most of the extra passengers were carried on domestic coach services in America, but T.W.A. transatlantic low-fare services, inaugurated on May 1st, carried some 15,000 up to the end of July.



FRENCH FEEDER: At Bordeaux-Merignac the Marcel Dassault concern have now almost completed work on the prototype M.D.316—a civil version of the Flamant armed light transport; 300 of the latter type have been built or ordered. Powered by two S.N.E.C.M.A. Super-Mars engines, the M.D.316 will carry eight to ten passengers.

AM5

The 20.25 Comet from Khartoum...

...owes much to DURALUMIN

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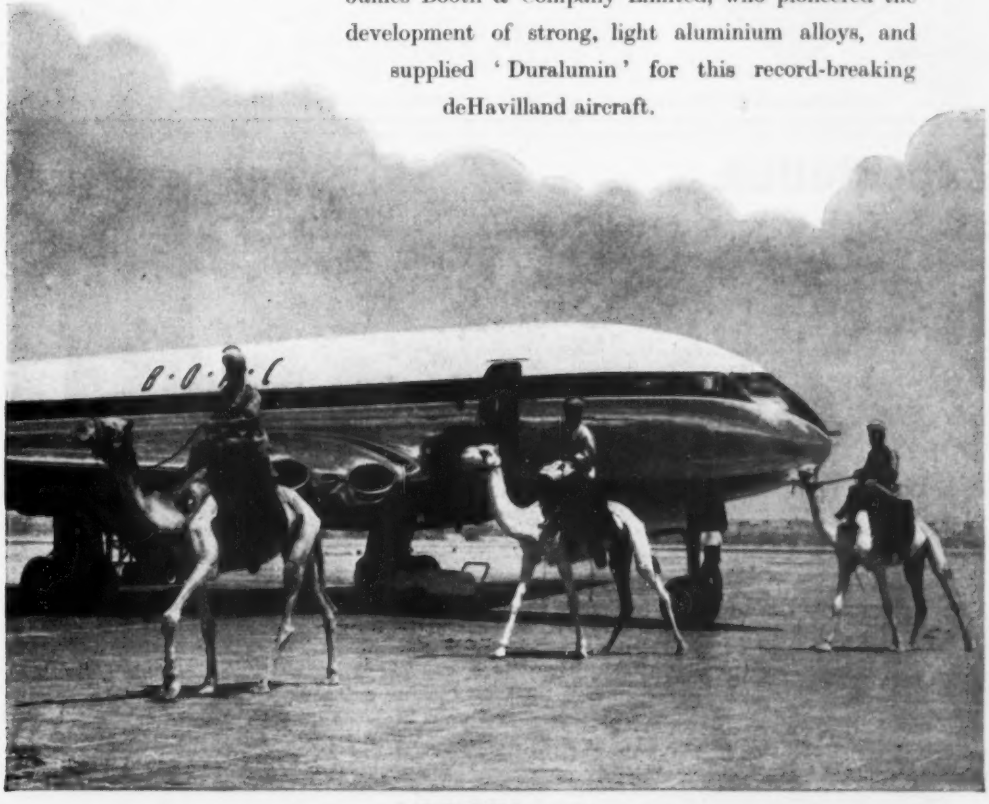
London to Khartoum in a day . . . Jo'burg in a day and a night . . . that's what the jet age means to modern air passengers. And the travellers in the Comet who fly so speedily across oceans and continents owe much to James Booth & Company Limited, who pioneered the development of strong, light aluminium alloys, and supplied 'Duralumin' for this record-breaking deHavilland aircraft.



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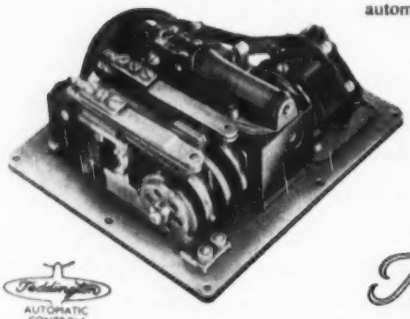
TURBO-STARTING TIME SWITCH

This switch incorporates a constant speed governed motor driving through a reduction gear box, a bank of cams. It provides an automatic sequence of operations for the starting of gas turbine engines, and operates on a 24 volt D.C. supply (nominal). The switch will operate in temperatures ranging from —45°C to +90°C, and is sealed to withstand interval pressure up to 2.5 p.s.i.



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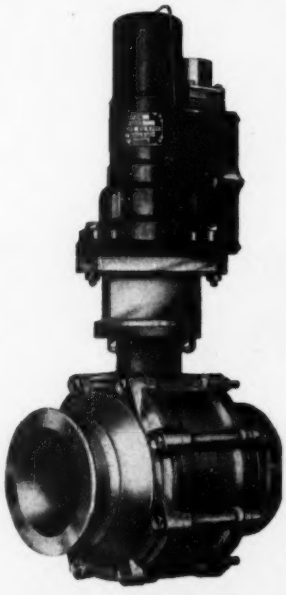
Expectation of Life

After nine years experience on most British and Civil Aircraft the life of the Saunders S.P. Aero Cock before overhaul has been established as five years.

Overhaul is simple, as any part can be replaced. The ultimate life of the cock is almost unlimited.

Maintenance of the Spindle Seal can be executed without removing cocks from the pipeline. The reason for this is that in the OPEN or CLOSED positions fluid pressure is not applied to the Spindle Seal even under pressure. This important characteristic reduces the fire hazard, since a continuous leak from the Spindle Seal cannot occur.

As an insurance of long, useful life install Saunders S.P. Cocks for all aircraft fluid control.



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CWMBRAN MONMOUTHSHIRE ENGLAND

CIVIL AVIATION . . .

NEW R.Ae.C. CERTIFICATES: FIRST LIST

WE publish in the adjacent column the first list, issued by the Royal Aero Club, of recipients of the new type of Pilot's Certificate. Pilots qualify for these certificates in four classes, details of which we repeat here :—

First Class.—500 hours' flying as pilot-in-command of a private or club aeroplane; evidence of landing at 20 different airfields; ten hours' dual instrument flying, of which five may be on a synthetic trainer; one flight as pilot-in-command, to a point not less than 750 miles from base; one flight involving customs clearance; flying experience as pilot-in-command on five different types of civil aeroplanes including twin-engined, retractable undercarriage and v.p.-airscrew types. Alternatively, the applicant can obtain a first-class certificate by producing evidence of 2,000 hours' flying as pilot-in-command of any type of aeroplane, or by holding an R.Ae.C. Aviator's Certificate issued between March, 1910, and December 31st, 1914.

Second Class.—125 hours' flying as pilot-in-command of a private or club aeroplane; evidence of landing at ten different airfields; two hours' dual instrument flying, of which one may be on a synthetic trainer; one flight as pilot-in-command to a point not less than 200 miles from base; one flight involving Customs clearance; flying experience as pilot-in-command of three different types of civil aeroplanes. Alternatively, applicants may give proof of 500 hours' flying as pilot-in-command of any type of aeroplane, or of the holding of a R.Ae.C. Aviator's Certificate issued between January 1st, 1915, and December 31st, 1918.

Third Class.—50 hours' flying as pilot-in-command of a private or club aeroplane; evidence of landing at five different airfields; one flight as pilot-in-command to a point not less than 100 miles from base. Alternatively, 200 hours' flying as pilot-in-command of any type of aeroplane, or the holding of an R.Ae.C. Aviator's Certificate issued between January 1st, 1919, and December 31st, 1939.

Fourth Class.—25 hours' flying as pilot-in-command; one flight as pilot-in-command to a point not less than 75 miles from base. Alternatively, the holding of an R.Ae.C. Aviator's Certificate between January 1st, 1940, and May 31st, 1952.

Pilots, private or commercial, whose qualifications fit any of these four classes may, on application to the Royal Aero Club (or through a R.Ae.C. official observer), obtain the appropriate certificate. The fee is 15s, including initial endorsement; subsequent endorsements are 5s each. Also available with each class of certificate are diplomas at 5s; neckties at 10s; and scarves (to special order) at 17s 6d.

An attractive aspect of this scheme, and one which is likely to be especially appreciated by the student pilot, is that, provided he or she can show the necessary qualifications for a certificate, it will be issued irrespective of whether or not the applicant holds a Private Pilot's Licence.

Particularly in Classes 1 and 2, the names in the new list make interesting reading. It will be noticed that the first is that of Lord Brabazon of Tara, who holds No. 1 certificate of the original R.Ae.C. series.

A few names of recipients of the familiar Aviators' Certificates—lists of whom have regularly appeared in *Flight*—have also lately been issued by the R.Ae.C., and are given after the new list.

No.	Name	Cl.	Date
28,100	Lord Brabazon of Tara	1	3.6
28,101	T. W. Hayhow	2	3.6
28,102	D. S. G. Honor	1	3.6
28,103	C. P. H. Grace	1	3.6
28,104	H. N. Gregg	2	3.6
28,105	D. A. W. Lee	1	3.6
28,106	G. A. Whittaker	2	3.6
28,107	W. L. Foster	2	3.6
28,108	C. Cruickshank	3	3.6
28,109	P. R. Jefferies	1	3.6
28,110	J. T. Ware	3	3.6
28,111	J. D. H. Radford	1	3.6
28,112	D. H. Stonebanks	4	3.6
28,113	H. R. R. Blank	3	3.6
28,114	H. W. Hall	1	3.6
28,115	J. H. W. Hill	1	5.6
28,116	A. F. Bandidt	1	5.6
28,117	D. S. Scofham	1	5.6
28,118	T. H. Sebag-Montefiore	1	9.6
28,119	A. G. Wilson	1	9.6
28,120	J. C. C. Taylor	1	9.6
28,121	E. S. J. Alcock	1	9.6
28,122	H. de Solla	2	9.6
28,123	J. E. Martens	1	9.6
28,124	H. A. McCarthy	2	9.6
28,125	W. Mockler	2	9.6
28,126	P. Bethell	2	9.6
28,127	R. W. Spears	2	10.6
28,128	M. Ward	2	10.6
28,129	R. H. Mayo'	1	17.6
28,130	L. W. White	1	17.6
28,131	H. A. Petre,	1	17.6
28,132	C. A. Jost	3	17.6
28,133	G. E. Billingham	3	17.6
28,134	J. V. Haris-Smith	1	17.6
28,135	C. Gregory	1	17.6
28,136	J. A. V. Watson	1	17.6
28,137	L. Thornhill	1	18.6
28,138	E. M. Trownson	3	18.6
28,139	W. R. Braithwaite	1	18.6
28,140	J. Akers	1	18.6
28,141	D. P. Dogherty	3	18.6
28,142	R. C. Michaelson	2	18.6
28,143	K. G. Hamnett	1	18.6
28,144	A. R. Adair	2	18.6
28,145	E. Day	2	18.6
28,146	A. Harrison	2	18.6
28,147	J. R. Micklethwait	1	18.6
28,148	Mrs. H. A. Micklethwait	2	18.6
28,149	P. E. Brewis	2	18.6
28,150	A. B. O'Hagan	4	21.6
28,151	W. E. J. Chivers	1	23.6
28,152	V. J. Burgess	4	23.6
28,153	R. Greville-Heygate	3	23.6
28,154	F. L. Clark	2	23.6
28,155	L. R. Snook	2	23.6
28,156	W. A. O'N. Waugh	2	23.6
28,157	T. Goeritz	3	23.6
28,158	R. C. Barton	2	23.6
28,159	J. D. R. Bethell	2	26.6
28,160	R. Leach	1	26.6
28,161	F. A. Rotherham	1	26.6
28,162	J. A. Hart	1	26.6
28,163	W. A. Villiers	1	26.6
28,164	S. J. F. Price	3	26.6
28,165	J. G. Croshaw	1	26.6
28,166	F. A. Dismore	2	27.6
28,167	C. R. Alston	2	30.6
28,168	T. V. Callard	2	1.7
28,169	A. E. H. Coltman	1	1.7
28,170	E. P. Hardman	2	1.7
28,171	G.-H. Calcagni	1	2.7
28,172	C. K. Turner-Hughes	1	4.7
28,173	N. A. Harper	2	16.7
28,174	A. F. Hawdon	3	17.7
28,175	C. J. Tucker	4	17.7
28,176	A. Jones	1	17.7
28,177	A. R. Driesson	2	17.7
28,178	R. H. Pilcher	2	17.7
28,179	T. S. M. Gard	4	17.7
28,180	B. P. W. Clapin	2	17.7
28,181	H. D. Coverley	2	17.7
28,182	W. L. Hope	1	17.7
28,183	E. C. M. Prentice	1	17.7
28,184	G. R. Christophersen	1	17.7
28,185	M. W. Anderson	2	17.7
28,186	J. A. Lodge	3	17.7
28,187	J. M. Paplar	2	18.7
28,188	D. G. Walker	1	18.7
28,189	W. G. Robson	1	18.7
28,190	G. Clifton	1	18.7
28,191	D. C. D. Potter	4	18.7
28,192	D. Van Gessel	4	23.7
28,193	A. G. Board	1	23.7
28,194	V. McCann	2	23.7
28,195	K. A. W. Paterson	2	23.7
28,196	J. P. R. Galbraith	1	23.7
28,197	J. A. Bassan	3	23.7
28,198	H. F. Buckmaster	3	25.7
28,199	L. D. C. Wilding	4	25.7
28,200	G. P. Reece	1	25.7
28,201	P. Q. Reiss	1	28.7
28,202	L. S. Hyder	2	29.7
28,203	T. W. Shipside	1	29.7

AVIATORS' CERTIFICATES

No.	Name	Club or School	Date
28,068	I. R. Matheson	Qualified Service pilot	6.5.52
28,069	Louis D. C. Wilding	Midland Aero Club	6.5.52
28,070	Knud Quistgaard	Private pilot	12.5.52
28,071	Alfred Norman Manser	Private pilot	14.5.52
28,072	Peter Charles Evetts	R.A.F. Cottesmore	15.5.52
28,073	William Way	Fair Oaks Aero Club	19.5.52
28,074	Sydney D. Hyman	Rochester Flying Club	20.5.52
28,075	Fenton John Enos Ellerbeck	Qualified Service pilot	5.6.52
28,076	George Francis Newbold	Qualified Service pilot	6.6.52
28,077	Peter Wickstead	R.A.F. Cottesmore	6.6.52
28,078	Stuart John Thetford-O'Brien	Furness Aero Club	19.6.52

FROM THE CLUBS

FLYING time for the Strathtay Aero Club amounted to 124 hr 45 min in July. Much solo time was lost through turbulent weather and, as a result, there was a nil return of pupils qualifying for P.P.L.s. The S.A.C.'s fleet increased during July to two Tiger Moths and one Auster; a third Tiger should be ready for service soon.

Strathtay members—who usually indulge in local flying only—visited Aberdeen, Carlisle, Newcastle and Edinburgh during the month; the committee hopes that other members will follow suit and gain more cross-country experience during the next few months.

CHRISTCHURCH AERO CLUB, inaugurated on June 14th, has now received Ministry of Civil Aviation recognition. Headquarters are on the de Havilland airfield at Christchurch, Hants, in accommodation made available by the company.

The venture has been financed, and is managed, by Mr. Tommy Marshall, a Bournemouth business-man; so far, the club has a fleet of two Tiger Moths and one Auster and membership of 25. Sixty-four members of the air section of the de Havilland sports and social club who have been flying at Thruxton, Portsmouth, and Eastleigh under the "£1 an hour" scheme will also use the club.

The three instructors are Mr. E. J. H. Thornton, Mr. R. Hayter (commander of No. 89 A.T.C. Gliding School at Christchurch), and Mr. Davis, a Wimborne schoolmaster.

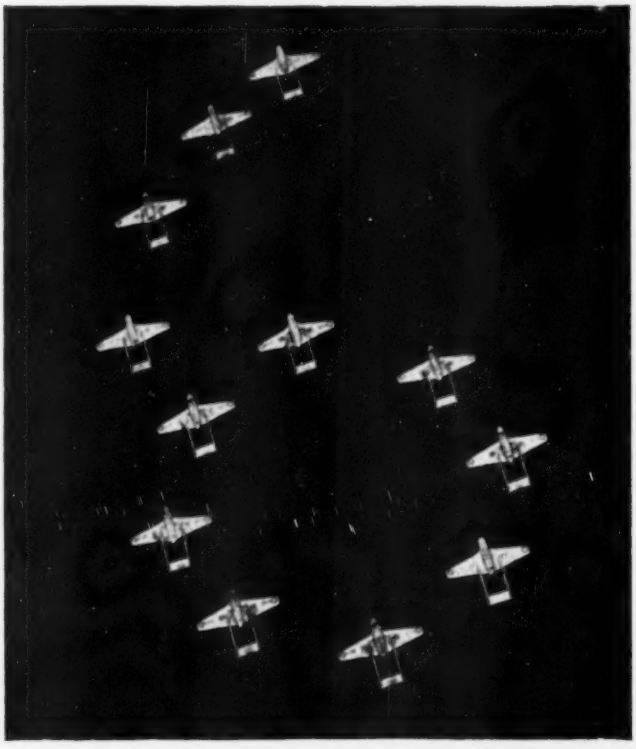
The club has a licensed bar and facilities for catering. It is hoped soon to arrange a dawn patrol, to which the nearby holiday resort of Bournemouth should be an added attraction.

WE have recently received a cheerful letter from Mr. A. B. Cunningham, secretary of the Wellington, N.Z., Aero Club, in which he expresses the interest taken by members of his club in our recent references to totals of flying hours. During the last two years, he says, the Wellington Club has made determined efforts to increase hours, and this drive has produced results.

It should be remembered, of course, that this club is run on altogether different lines from those in Britain, but the figures are, nevertheless, startling. The fleet of ten aircraft (2 Geminis, 1 Proctor, 1 Chipmunk, 1 Aiglet and 5 Tiger Moths) is not so very much larger, if at all, than that of some of our major clubs; yet their flying totals amounted to some 4,059 hours in 1952, 4,071 in 1951! During one week-end alone, admittedly including the Friday, 109 hr were flown. We hope shortly to publish Mr. Cunningham's letter, which gives a detailed analysis of the totals.

SERVICE AVIATION

Royal Air Force and Naval Aviation News



SIX IN THE ASCENDANT: This "trademark" of a famous Middle East Squadron—is flown on every arrival at, or departure from, a station. This year No. 6 Squadron has won both the trophies which a fighter squadron can win in the Middle East: the Mason Trophy for weapon efficiency, and the Lloyd Cup awarded to the best all-round combat squadron.

R.A.F. Appointments

DURING this month A. V-M. J. G. Hawtrey, C.B.E., will take up his new appointment as Air Officer Commanding Iraq. Since October last year A. V-M. Hawtrey has been S.A.S.O. to the Far East Air Force and prior to that was Head of the R.A.F. Delegation and A.O.C. in Greece. This is his second spell of duty in Iraq. From 1940 to 1942 he served first as Inspector of the Royal Iraqi Air Force and later as Station Commander at Mosul.

The new Controller of Engineering and Equipment at the Air Ministry, who also takes over this month, is A. V-M. R. O. Jones, C.B., A.F.C. He will assume the acting rank of Air Marshal. A. V-M. Jones has been A.O.C. No. 24 Group, Technical Training Command, since the end of 1949.

R.A.F. Regiment Commandant

FOLLOWING A. V-M. S. C. Strafford's appointment as Inspector-General of the R.A.F., the Air Ministry has announced that A. V-M. Sir Francis J. W. Mellersh, K.B.E., A.F.C., is to succeed him as Commandant-General of the R.A.F. Regiment and Inspector of Ground Combat Training. For this task his recent long tour of duty as A.O.C. Malaya will stand him in good stead It was for his distinguished services in that area that Sir Francis received his knighthood.

Naval Appointments

THE following appointments in the rank of captain have been announced by the Admiralty: Capt. A. J. T. Roe, D.S.O., O.B.E., is to be Deputy Director of Air Warfare at the Admiralty and Capt. A. F. Campbell, O.B.E., goes to H.M.S. *Indefatigable* in command. Capt. F. M. A. Torrens-Spence, D.S.O., D.S.C., A.F.C., also goes to the Admiralty for duty with the Director of Air Warfare.

Apprentices Awarded Cadetships

FOR the first time since the scheme for awarding cadetships at Cranwell to outstanding administrative apprentices was introduced, three have been awarded to members of the same entry. The recipients are: Cpl. Admin/App. D. G. Roberts (Secretarial Branch); L. Admin/App. P. Berry (General Duties) and L. Admin/App. J. F. Merry (General Duties).

The reviewing officer at the passing-out parade was A. V-M. C. E. H. Allen, C.B., D.F.C., Director-General of Technical Services, and on the dais with him were A. Cdre. J. Mutch, C.B.E., Officer Commanding R.A.F. St. Athan, W/C. T. Preston, D.F.C. (representing the A.O.C. of No. 22 Group) and W/C. G. P. S. Pollard, C.B.E., Officer Commanding Administrative Apprentice Training School.

FOR CRANWELL: Cpl. Admin/App. D. G. Roberts, L. Admin/App. P. Berry and L. Admin/App. J. F. Merry, who, as reported on this page, have all been awarded cadetships to the Royal Air Force College from the Apprentices Training School at St. Athan, Glamorganshire.

The Greenland Expedition

KEEPING to their schedule, four aircraft of Coastal Command—three Sunderlands and one Lancaster—left for Iceland on August 1st, *en route* for Greenland, where they are taking part in operations to assist the British North Greenland Expedition.

The three Sunderlands, captained by F/Ls. C. M. Stavert, S. Bowater and F/O. E. W. Beer, were expected to start on Tuesday of last week the shuttle service between Young Sound and Britannia Lake, 888 miles from the North Pole. Approximately 150 tons of stores and equipment have to be transported to establish the base camp; this in addition to the members of the expedition. If all goes to schedule the airlift should be completed by August 20th.

The Lancaster, with F/L. K. Ignatowski as its captain, left St. Eval, Cornwall, for Reykjavik at 0903 hr carrying an airborne lifeboat for dropping on Britannia Lake, where it is now in use for unloading the flying boats. No landing was made by the Lancaster in Greenland—the round trip from Iceland to Britannia Lake and back was about 1,600 miles. A photograph of the Sunderlands at Young Sound appears on page 173.

Air-fighting Tactics Unchanged

AT the conclusion of a three weeks' tour of duty with No. 77 Squadron R.A.A.F in Korea, W/C. P. G. Ottewill, G.M., R.A.F., has expressed the opinion that despite the increased speed of jet aircraft, aerial fighting tactics remain essentially the same as those employed during the Battle of Britain.

R.N.Z.A.F. Fighter Wing

A FIGHTER wing is to be formed by the Royal New Zealand Air Force and will comprise six mobile squadrons—two from the regular air force and four territorial squadrons. Based at Ohakea, the wing will be trained in a fighter ground-attack role.

One of the squadrons, No. 14, will leave in September for service in the Middle

East. The other squadron of the regular force will shortly be equipped with Vampires and the territorial squadrons will receive them as they become available. In the meantime, pilots will train on Mustangs which are being taken from reserve.

Battle of Britain Service

A SERVICE of thanksgiving for the victory achieved in the Battle of Britain will be held in Westminster Abbey on Sunday, September 21st, at 3 p.m.

Applications for tickets from widows and bereaved parents of Battle of Britain aircrew, and from retired R.A.F. officers and Battle of Britain pilots who wish to attend, should be addressed to the Under-Secretary of State, Air Ministry (S.4-d), Whitehall, S.W.1, not later than September 8th. Not more than two tickets can be issued to any applicant.

R.Aux.A.F. Appointments

RECENT appointments to the command of Fighter Control Units of the R.Aux.A.F. include those of W/C. H. Priestley, No. 3620 (County of Norfolk), W/C. A. C. Case, M.B.E., B.Sc., No. 3604 (County of Middlesex) and W/C. A. V. Duffill, D.F.C., No. 3505 (East Riding). These three officers all served in the R.A.F. during the war. W/C. Duffill's D.F.C. was awarded under exceptional circumstances; the remainder of his crew all received the D.F.M. for the same action. While crossing the Dutch coast his formation was attacked by a large force of enemy fighters and his aircraft was hit, both sergeant gunners receiving wounds and a fire breaking out, which was extinguished by the navigator. The air gunner continued to engage the enemy despite wounds in the legs, and W/C. Duffill (then a flight lieutenant) took skilful avoiding action while the navigator dragged the other gunner across a large hole in the fuselage and gave him efficient first aid. W/C. Duffill eventually flew his badly damaged bomber back to base.

AMERICAN TRANSPORT: Over 400 members of No. 45 Parachute Brigade, Territorial Army, recently took off from Topcliffe, Yorkshire, in 13 C-82s of the United States 12th Air Force. The exercise, in which regular troops provided the opposition, was to attempt to secure a bridgehead across the Rhine.

Reorganization of R.A.A.F.

IN a statement made by the Australian Minister for Air, Mr. William McMahon, important changes in the organization of the higher administration of the Royal Australian Air Force are revealed.

The Air Board has been reconstituted. In future the secretary and civilian head of the Department of Air will sit as a full member, replacing the previous finance member, and will share collective responsibility for Air Force control and administration. His main responsibilities will concern interior economy at headquarters and co-ordination of departmental and financial administration of the R.A.A.F. as a whole. These duties will, of course, be in addition to those for which he is responsible as the permanent head of the department. The effect is expected to be two-fold: it should ensure that all Service and departmental problems will be considered by one authority and also that integration of Service and civil administration will be closer.

Delegation of authority to members of the Air Board is a further feature of the re-organization. Detailed administration, in accordance with approved policy, will become the responsibility of the Air Member or head of branch concerned. This, it is thought, will reduce considerably the number of detailed submissions to the Board and create conditions for a rapid and efficient flow of business through the department.

PAKISTAN PRIZE: Air Marshal Sir Victor E. Groom, A.O.C.-in-C. Technical Training Command, presenting the Azhan memorial shield to L. A/App. A. M. Chaudhry at the recent graduation parade of No. 63 Entry at Halton. The shield is awarded to the best all-round Pakistan apprentice.

High Speed Flight Association

IT has been decided to form an association of the High Speed Flight personnel who took part in the Schneider Trophy contests of 1927, 1929 and 1931. It is felt that the inauguration of such an association on the 21st anniversary of Gt. Britain winning the trophy outright would form a unique link between the Service and civilian personnel who participated in this contest.

Those eligible to join the association are: all R.A.F. officers and airmen who were on the posted strength of the R.A.F. High Speed Flight for the Schneider Trophy contests held at Venice, Italy, on September 26th, 1927, and at Calshot on September 7th, 1929, and September 13th, 1931; civilian representatives of the aircraft industry directly concerned at Venice and Calshot with the competing aircraft and associated equipment; and civilian technical personnel of the Royal Aircraft Establishment, Farnborough, and the Marine Aircraft Experimental Establishment, Felixstowe, who were seconded for duty with the R.A.F. High Speed Flight.

Air Marshal Sir John N. Boothman, Controller of Supplies (Air) at the Ministry of Supply, has accepted the presidency of the new association and A. V-M. F. W. Long has agreed to act as chairman of the organizing committee.

Those wishing to join the association should write to S/L. H. G. Thomas, M.B.E., H.Q., Fighter Command, R.A.F., Bentley Priory, Stanmore, Middlesex.

Reunions

THE Battle of Britain reunion dinner will be held at H.Q. Fighter Command on Monday, September 15th, at 7.30 p.m. All serving and released aircrew personnel who flew in fighter aircraft in the Battle of Britain between July 10th and October 31st, 1940, and who are eligible to wear the clasp of the 1939-45 Star, are invited to apply for tickets to the Senior Personnel Staff Officer, Fighter Command, R.A.F., Bentley Priory, Stanmore, Middlesex, as soon as possible. Communications should be marked "Battle of Britain Dinner."

No. 3 S. of G.R. (Squires Gate) will hold its seventh reunion dinner at Blackpool on October 4th. Particulars may be had from Mr. A. C. M. Powell, 26, North Promenade, St. Annes-on-Sea, Lancashire.

THE INDUSTRY

Pointer to Progress

CONFIDENCE in the ability of the Avro Canada organization to continue its successful development and production of aircraft and gas turbines is indicated by the news that the parent Hawker Siddeley Group is making a further investment of $3,000,000 in the company, bringing its total investment in shares to $10,000,000.

In making the announcement, Crawford Gordon, Jr., president and general manager of Avro Canada, said the additional subscription was also "a forward step in the growth of Avro Canada as a commercial company now doing important defence work for the Government in producing CF-100 fighters and Orenda engines as well as other assignments." He pointed out that while the company is managing certain projects for the Federal Government under the rearmament programme, it remains essentially a private concern engaged in development, research and production.

Dunlop Senior Appointments

IT is announced that Mr. D. B. Collett, vice-president and general manager of the Dunlop organization in Toronto, is shortly returning to England to join the Dunlop main board as an executive director. He will work in close association with Mr. A. Healey, executive director in charge of all production, including technical development, research and labour policy.

Mr. Collett, who is 44, is the seventh son of the late Sir Charles Collett, Bt., Lord Mayor of London in 1933-4. He joined the company in 1926.

Mr. J. F. Anderson, C.B.E., Dunlop's chief purchasing agent, succeeds Mr. Collett in Toronto, and will in turn be succeeded by Mr. L. J. W. Bailey, general manager of Dunlop Plantations, Ltd.

A New Nimonic

ALTHOUGH the part played by metallurgists in developing now-established materials for gas turbines is generally appreciated, the necessity for unceasing development of improved alloys may be less obvious. Nothing in aeronautics is ever quite static, and the demands of gas turbines for operation at ever-increasing temperatures implies the constant provision of ever-better materials.

To meet this demand the Mond Nickel company have continued to develop their ubiquitous Nimonic alloys, and the newest which may be mentioned, Nimonic 95, is likely to permit significant increases in the output of gas-turbine power-plants, by raising the maximum permissible temperatures and operating stresses.

An alloy with a high creep-resistance at elevated temperatures is necessarily difficult to hot-work. One of the major problems in the development of Nimonic 95 was the maintenance of reasonable forging characteristics; but this has been successfully achieved, and the new alloy can be machined and hot-rolled without trouble. The improved mechanical properties have been obtained by increasing the percentages of the hardening elements and, since this does not usually produce an increase in the melting-point of the alloy, there is to be expected a reduction in the temperature-interval within which hot-working may be performed.

The "production" side of the Nimonic alloys is the prerogative of Henry Wiggin and Co., Ltd., who have managed to perfect a technique for fabricating the new alloy by maintaining careful control of the ingredients and by carrying out melting and casting within strictly defined limits, as well as by making parallel improvements in hot-working technique.

Since the alloy is a fairly new development, extended tests over long periods have not yet been made; but the short-time results, which are of primary importance in aircraft engines, indicate that Nimonic 95 will show significantly better properties than any of its predecessors. The following table gives a selection of summarized results over a 100-hour test period:

Temp. (deg C)	Stress to Rupture in 100 hr (tons/sq in)	Approx. Min. Creep Rate for 100 hr (per cent/hr)
750	23	0.002/0.005
815	14	0.002/0.005
870	9	0.002/0.005
900	6.5	0.005/0.01
925	5	0.005/0.01

Long-term testing is in hand to extend the knowledge of the creep-resistance of the alloy and to determine other properties. In the meantime, Nimonic 95 is being produced by Henry Wiggin and Co., Ltd., and is being used in experimental quantities by engine manufacturers.

THE HON. GEORGE R. WARD, Under-Secretary of State for Air, recently visited the Sperry Gyroscope Company's works at Brentford, Middlesex, where he saw various flight instruments being assembled and tested. He is seen here (left) with Capt. A. V. S. Yates, director of engineering, and (right) W/C. J. C. G. Bell, sales manager. Later, Mr. Ward—who served as a pilot in the R.A.F., attaining the rank of group captain—flew in the company's demonstration Anson, and gained personal experience of the Zero Reader flight-director.

R.F.D. Results

AT the annual general meeting of the R.F.D. Co., Ltd., due to be held in London today, August 15th, the chairman's address will report further increased turnover in the company's aeronautical division, especially in the fields of air/sea rescue equipment and A.A. gunnery training apparatus. Contracts are being fulfilled for the British Goverment and those of 15 other nations, as well as for numerous aircraft constructors.

In order to meet the wishes of the Canadian authorities, a manufacturing, maintenance and repair unit has been established in the Dominion and, under the title of R.F.D. (Canada) Ltd., is already operating.

Instrumental Achievement

AT the annual general meeting of Kelvin and Hughes, Ltd., held in London last week, the chairman (Mr. Ralph Gordon-Smith) referred to the progress made by the company's aviation division, mentioning the provision of flight and navigation instruments provided for the Comet—in particular, the periscopic sextant and high-accuracy engine-speed indicator. He added that the Kelvin and Hughes turn-and-slip indicator had been adopted by the R.A.F. and R.C.A.F., the order in the latter case being obtained against severe American competition.

Europe's Largest Refinery

WITH an increase of more than 50 per cent on its present crude-oil processing capacity of 5½ million tons per annum, the Pernis (Rotterdam) refinery will have a "throughput" of 9 million tons a year by the beginning of 1954. It will thus become by far the largest refinery in Europe, including the U.K.

The additional capacity is to come from a new 3½ million-tons-a-year distillation unit on which preliminary construction work has started. This project, estimated to cost £2,000,000, will mark a further phase of the post-war construction programme of the Pernis refinery, which has already cost over £20 million. The plant is one of the Royal Dutch/Shell Group refineries which are strategically located to supply the Western European market in the most economical way.

Anti-dust Respirator

THE finishing of steel castings often results in the dispersal of large quantities of finely divided silica, thus exposing the operator to the danger of silicosis. To combat these offensive particles the Committee on Industrial Health of the British Steel Founders' Association requested Siebe, Gorman and Co., Ltd., of Tolworth, Surrey, to design an efficient respirator which could be worn comfortably for long periods.

The resulting product, known as the "Microfilter," consists of a moulded plastic facepiece and filter-holder to which is attached a sponge-rubber face pad, available in two sizes. The filter itself is a disc of Merino wool impregnated with resin, held between muslin diaphragms and perforated metal plates; rubber non-return valves are used at inlet and outlet. The assembly is held in position over the mouth and nose by a simple elastic harness.

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(2) STRESSMEN. Vacancies exist for both Senior and Junior stressmen and while some aircraft or missile experience is desirable, consideration will be given to applicants with experience in other industries.

(3) GRADUATE ENGINEERS/APPLIED MATHEMATICIANS. Honours graduates for advanced stress analysis investigations of a research nature are required. While aircraft or missile experience is an advantage, the primary qualifications are a good mathematical background and an enquiring outlook.

(4) AERO-ELASTICIANS. Technicians of degree standard are required for aero-elastic investigations. Previous work on aero-elastic problems is not essential, but past experience should include work on aerodynamics and/or aircraft structures, while a knowledge of supersonic aerodynamics is an added advantage.

(5) WEIGHT CONTROL ENGINEERS. A vacancy exists for a senior weight control engineer capable of not merely calculating weight breakdowns, but of actively chasing and controlling weights. Some aircraft or missile experience is essential. There are also vacancies for junior weight control engineers to assist in this work.

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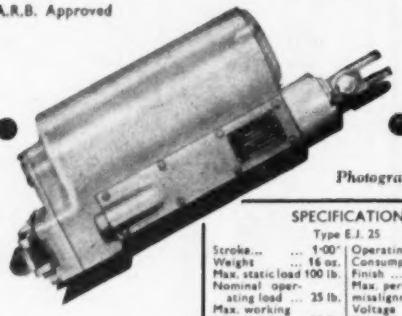

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Max. static load	18,000 lb.	Finish	Grey and chrome
Nominal operating load ...	4,500 lb.	Max. permissible misalignment	6°
Max. working load ...	6,000 lb.	Voltage ...	24 d.c.
		Rating ...	1 min.

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Type E.J. 25

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Weight ...	16 oz.	Consumption	2 amps.
Max. static load	100 lb.	Finish	Grey
Nominal operating load ...	25 lb.	Max. permissible misalignment ...	6°
Max. working load ...	50 lb.	Voltage ...	24 d.c.
		Rating	1 min.

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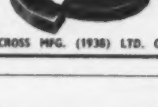

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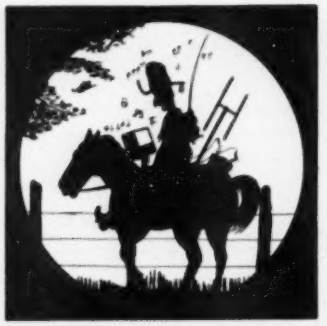

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LANCASHIRE AIRCRAFT CORPORATION, Ltd., Bovingdon Airport, Herts, require qualified pilots, navigators and radio officers for their York fleet. Only applicants holding appropriate M.C.A. licences will be considered.—Please write full details to the Personnel Manager, at above address. [0590]

SENIOR design and intermediate draughtsmen with good experience of aircraft or light structural or mechanical engineering required for aircraft and armament project work at Portsmouth and Hurn offices.—Apply by letter to Portsmouth Aviation, Ltd., The Airport, Portsmouth. [8391]

AIR SCHOOLS, Ltd., require a qualified flying instructor with a minimum B.1. category, also one ex-flying instructor qualified to instruct on applied flying subjects. —Applications to be addressed to the Chief Instructor, Air Schools, Ltd., Derby Airport, Burnaston, nr. Derby, giving fullest particulars of experience. [8469]

TEST laboratory assistants (male) required by Percival Aircraft, Ltd., Luton Airport, Beds. National Certificate standard and previous experience on design of test laboratory equipment desirable. Good welfare facilities, including staff pension scheme.—Applications, stating qualifications, experience, age and salary required, to Manager, Employment Exchange, Luton, Beds. [0598]

TECHNICAL assistant. The Aircraft Design Technical Office of the Bristol Aeroplane Co., Ltd., has a vacancy for a junior or intermediate technical assistant in their engineering development laboratory. The work is concerned with the vibration testing of aircraft structures and mechanical systems on an interesting range of civil and military aircraft and helicopters.

CANDIDATES should possess a Higher National Certificate in electrical engineering or equivalent qualification.

APPLICATIONS should be forwarded to the Ministry of Labour and National Service, 20, Nelson Street, Bristol, and marked for the attention of the Personnel Manager, The Bristol Aeroplane Co., Ltd., Aircraft Division, Filton House, Bristol. [8469]

PLANNING engineers (aircraft) required by Percival Aircraft, Ltd., Luton Airport, Beds. Considerable practical experience of manufacture of metal airframe components and production planning essential qualifications.—Apply to Manager, Employment Exchange, Luton, giving full details of age, qualifications, experience and salary required. [0597]

A well-known company engaged on gas turbine development in the London area and North West of England has vacancies for technicians of all grades. Designers, aerodynamicists and mathematicians wishing to be considered for these interesting positions on work of national importance, should write, giving full details, quoting Ref. H.I.C. to Box 1986. [8557]

TECHNICAL assistants. The de Havilland Engine Co. Ltd., requires engineers for performance analysis and design calculation for gas turbine engines. Knowledge of thermodynamics essential, and preferably with a knowledge of fluid aerodynamics. Please write, giving age, full details of previous experience, qualifications, etc., to the Personnel Officer, Stag Lane, Edgware, Middlesex. [8559

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APPLICATIONS to be addressed to the **CHIEF DESIGNER** giving particulars of **Experience, Age and Salary**

SITUATIONS VACANT

REQUIRED immediately by Percival Aircraft, Ltd., Luton Airport, Beds, several draughtsmen with comprehensive experience of engine installations and allied systems. Good welfare facilities, including staff pension scheme.—Applications, in writing, stating age, qualifications, experience and salary required, to the Luton Employment Exchange. [8691]

CHRISTCHURCH, Hants. Senior designing draughtsman required; experienced in power-plant installation. Must have jet installation design experience and capable of taking control of section under assistant designer. Saturday or Sunday interview can be arranged.—Applications to Chief Draughtsman, The de Havilland Aircraft Co., Ltd., Airspeed Division, Christchurch, Hants. [8489a]

CHRISTCHURCH, Hants. Applications are invited for a position as chemist to undertake general chemical and investigation work associated with aircraft structure. Training should have reached the degree standard with bias towards organic.—Applications to Personnel Manager, The de Havilland Aircraft Co., Ltd., Airspeed Division, Christchurch, Hants. [8489]

APPLICATIONS are invited from senior and intermediate design draughtsmen. Experience of aero-engine design desirable, but not essential. Also checkers.—Please write, stating age and giving details of previous experience in chronological order, to the Personnel Officer, The de Havilland Engine Co., Ltd., Stag Lane, Edgware, Middlesex. [8630]

EXPERIENCED men (ex-Service radar mechanics preferred) are required for duties in the Electronics Division of Saunders-Roe, Ltd. Applicants should be capable of intelligent assembly and wiring of a wide variety of electronic apparatus from circuit diagrams.—Write, giving details of experience, age, etc., to the Personnel Officer, Saunders-Roe, Ltd., East Cowes, Isle of Wight. [8514]

APPLICATIONS are invited from design draughtsmen and stressmen, also technical assistants with combined design and performance experience for work on both reciprocating and gas turbine aero engines.—Applications should state full particulars of experience and qualifications and should be addressed to the Personnel Officer, The de Havilland Engine Co., Ltd., Stag Lane, Edgware, Middlesex. [8632]

AIR FORCE, Naval, civil and helicopter aircraft all under design and development at Percival Aircraft, Ltd., Luton Airport, Beds. Applications are invited from senior and junior draughtsmen and stressmen, for work on this interesting programme. Good welfare facilities, including staff pension scheme.—Write, giving details of experience and salary required, to Manager, Ministry of Labour and National Service, Luton, Beds. [8685]

REQUIRED immediately for service with Sudan Airways, Khartoum, "A" and "C" licensed engineer with endorsement for Dove and Gypsy Queen 70. Salary £E1,100 by 4 years to £E1,250, plus cost-of-living bonus, 60 days paid leave per annum. Free air passages for families, 1 year contract with option to renew. Airwork, Ltd., Overseas Division, Sutton Lane, Langley, Bucks.—Appointment will be made through the local office of the Ministry of Labour. [8561]

BRITISH EUROPEAN AIRWAYS require a modifications engineer at Renfrew. Applicants should have served an apprenticeship in mechanical engineering and possess Higher National Certificate, or equivalent, in mechanical or production engineering. A sound knowledge of aircraft structure and working practice is essential. Pension scheme. Generous holiday and travel facilities. Salary scale £505-£720 p.a.—Applications to be addressed to Senior Personnel Officer (Scotland), B.E.A., Renfrew Airport, Scotland. [8560]

PUBLIC ANNOUNCEMENTS

AIR TRANSPORT ADVISORY COUNCIL.

THE Air Transport Advisory Council give notice that, in accordance with the general arrangements announced in Parliament on May 27th, 1953, concerning the development of air transport, the Minister of Civil Aviation has now issued to them Terms of Reference and that they are, therefore, ready to receive applications from the Airways Corporations and British air transport companies to operate scheduled services and inclusive tours. The Council will consider all applications in accordance with the Terms of Reference and will make recommendations to the Minister, whose decisions will be final.

APPLICATIONS must be made on a standard form, copies of which can be obtained from the Secretary at 9, Buckingham Gate, London, S.W.1 (Victoria 7436). Applications should be made as soon as possible and in no case less than three months before the proposed starting date of an internal service or less than four months before the proposed starting date of an international service. Exceptionally, however, the Council will at their discretion accept, not less than 21 days before the proposed starting date of the service, applications for short-term services, not exceeding a period of 14 days operation wholly within the United Kingdom.

THE Council will as soon as possible after receipt publish in *The Times*, *Aeroplane* and *Flight*, the main particulars of all applications which appear to them to be eligible for consideration under their Terms of Reference, except of those relating to such short-term services referred to in paragraph 2 above, as do not appear to affect the interests of other operators. Further details of applications, except for such information as is allowed to be given by the applicants in confidence, may be obtained from the Secretary of the Council. Persons having an interest in an application may submit in writing to the Council within 14 days from the date of advertisement any representations or objections which they desire to make. Such representations or objections must include a statement of reasons. The Council will, as appropriate, notify the applicant of any objections or representations.

SHOULD the Council decide that an enquiry is desirable, at which the applicant and interested parties may appear to state their cases, they will hold one, either in public or in private according to the particular circumstances. If the enquiry is to be held in private, they will give not less than 7 days' notice to the applicant and to such other persons as the Council consider have indicated a valid interest in the application. If it is to be held in public, not less than 21 days' notice will be given by public advertisement in *The Times*, *Aeroplane* and *Flight*.

THE Council will decide in private upon their recommendations to the Minister, who will convey his decision on the Council's recommendations to the applicant and to any persons who have made representations or objections on the application. The Council cannot undertake that their recommendations will be made within any stated period but every endeavour will be made to deal with applications as speedily as possible. [8552]

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STRESS engineer, B.Sc., A.C.G.I., A.F.R.Ae.S. 10 years industrial experience (including 6 years' aircraft), seeks progressive position. Present salary £750 p.a.—Box 1910. [8545]

EXPERIENCED pilot, 7B types, single and multi. Flying instructor. Married, no family. P.P. licence. Fully conversant with club management and flying training. Requires change of situation, preferably abroad.—Box 1973. [8555]

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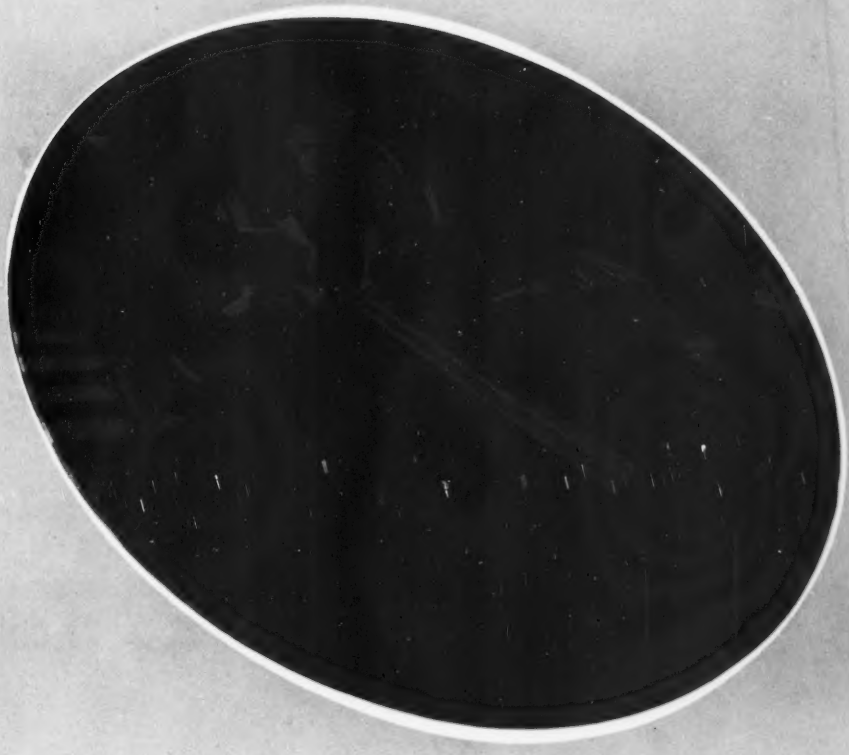

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